

# Spectra

June  
2009  
Issue 3

ARMY  
TEAM  
C4ISR

## Building an Army Center of Excellence

### At Aberdeen Proving Ground

*One Vision, One Mission -*

C4ISR: News on  
Systems, Sustainment,  
Developments

PEOPLE: Hiring,  
Training, Split-Based  
Operations

FACILITIES: Campus  
Construction Ahead  
of Pace

DOMAINS: Center  
Leverages Army  
Enterprise Concept

***The Warfighter.***



**MG Dennis L. Via** *Commanding General, CECOM Life Cycle Management Command*

## Building a 21st Century Center of Excellence for a 21st Century Army

**A** little over one year ago on March 17, 2008, we embarked on a remarkable journey. Proud of our illustrious past, and undergirded by 92 years of history, we began writing the next chapter in transforming our command to meet the needs of a 21st Century Army at a new state-of-the-art campus for Command and Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) at Aberdeen Proving Ground, Maryland. On that historic day at the Groundbreaking Ceremony, I commented: "Today marks a significant milestone for our Army and in the magnificent history of CECOM and Army Team C4ISR in our grand endeavor to establish a Land C4ISR and Battle Command Center of Excellence here at Aberdeen Proving Ground, Maryland. It is a day for which we all should be very proud, as it represents a once-in-a-generation investment by the Department of Defense and the United States Army in our personnel and facilities, and our command's collective ability to engineer, develop, acquire, deliver, and sustain superior

command, control, communications, computer, intelligence, surveillance, and reconnaissance systems and capabilities for the Joint Warfighter."

I added that "this ground-breaking ceremony represents a new journey...new beginnings... and new opportunities, and ushers in a new era for CECOM Lifecycle Management Command..... As we begin a new chapter in our proud history, we do so with great confidence in continuing to execute our mission, along with a renewed sense of commitment of exceptional service to our nation.

Recently we published our "CECOM 2015" Life Cycle Management Command Vision for building an Army Center of Excellence at Aberdeen Proving Ground. "CECOM 2015" outlines our collective approach in realizing our vision to become the Department of Defense's premier C4ISR capabilities provider for the Joint Warfighter. Leveraging Base Realignment and Closure (BRAC) as a catalyst for change, we're using this unique opportunity to genuinely transform our command and its partners to meet the demands of the 21st Century. Adding to the challenges of transforming our command to meet future requirements are the realities of an era of, as described by the Chief of Staff, Army, General George Casey, "persistent conflict and persistent RESET", impacts of a growing Army, sustained global operational deployments, and the emerging reality of reduced resources. With this backdrop, CECOM LCMC remains focused on our number one priority: supporting the Warfighter while taking care of our people.

A few key components of the CECOM 2015 Vision include:

- ◆ A fully reconstituted 21st Century technically proficient global workforce that embraces new operating policies, cutting-edge technology, teaming approaches, and enterprise thinking to support current Warfighter needs while anticipating future requirements and producing innovative solutions to complex problems

- ◆ Improved mission efficiency and effectiveness through the Army Materiel Enterprise (ME) while leveraging the Army Force Generation (ARFORGEN) process

- ◆ Fully integrating 13 new mission domains to elevate materiel Life Cycle Management (LCM) to the next level

- ◆ Improved cross-functional collaboration between the research and development, acquisition, and sustainment communities to speed delivery of break-through technologies that are functional, sustainable, and affordable throughout their entire life cycle

Providing the foundation for the 2015 Vision is an \$800 million C4ISR Center of Excellence campus at APG, which is scheduled for completion by December 2010. This remarkable, contemporary-designed campus facility will be comprised of state-of-the-art laboratories,

Information Technology (IT) facilities, and office buildings interconnected by an advanced IT infrastructure. The campus design is visionary, in and of itself, in that the buildings and floor designs are organized in 13 unique, but interrelated C4ISR "mission domains" that will dramatically improve communication, synergy, transparency, and collaboration across the C4ISR community, resulting in a uniquely positive workplace experience for our employees, and ultimately, improved support to the Warfighter. These mission domains are central to our transformation and represent the very core of the Center of Excellence concept and vision. Our new C4ISR CoE campus will enable us to institutionalize Life Cycle Management for the C4ISR community, and ensure an enterprise approach to our future mission processes.

People are, and will remain our most valuable resource, and are at the center of our vision. Accordingly, we are committed to establishing a new C4ISR culture that recognizes the value of our changing workforce. In the next three to five years, CECOM has the challenge of recruiting, relocating, and retaining hundreds of new employees in order to sustain current missions and reconstitute our organizations at APG. No greater challenge presents itself for enabling our vision for the future, and it is a task we are embracing head-on.

2015 is just over the horizon. As we continue this journey of dynamic change and transformation, the over 11,000 people who comprise the CECOM Life Cycle Management Command remain focused on providing the most advanced C4ISR systems, capabilities, and support possible to our Warfighters. These are truly exciting times that present all of us at CECOM LCMC a unique opportunity to truly make a difference for our command, our people, our Soldiers, our Army, and our nation.

This is the last edition of SPECTRA while serving as the CECOM LCMC Commander, and I want to take this opportunity to personally thank the entire CECOM and Army Team C4ISR publishing staff for their outstanding efforts in publishing this magazine. Although this is only the 3rd edition, this team is off to a tremendous start in producing what I anticipate will be an award-winning publication. I want to also thank our magnificent employees whom I've had the honor and privilege of serving as their Commanding General over the past 23 months. Thanks for all you do for our Soldiers, Army Civilians, contract employees, and their families. As my family and I depart Fort Monmouth, I remain confident that the focus of CECOM LCMC and Army Team C4ISR remains unchanged --

**One Vision, One Mission - The Warfighter!**

**Army Strong!**





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Illustration by Timothy Rider

*A graphic illustration of Fort Monmouth's West Gate, an aerial photo taken in February of the Phase One Campus construction site and a graphic illustration of that campus by the architects (Skidmore Owings and Merrill LLP) are interposed to show the transition of the mission from Fort Monmouth to the Army C4ISR Center of Excellence at Aberdeen Proving Ground, Maryland.*

**Spectra** n. a plural of spectrum. 1. an array of entities, as light waves or particles, ordered in accordance with the magnitudes of a common physical property. 2. A broad range of varied but related ideas or objects that form a continuous series or sequence.



From the Random House College Dictionary, First Edition

# CECOM's pride and professionalism

**By CSM Tyrone Johnson**  
*CECOM LCMC Command Sergeant Major*

Since assuming my position as the Command Sergeant Major of the CECOM Life Cycle Management Command and Fort Monmouth, I have had the opportunity to meet with most of the Commanders and Directorates from the command. While visiting their facilities, I have truly realized the capabilities the CECOM LCMC and Army Team C4ISR provide for the Army as well as for the joint Warfighter. I had the opportunity to be on the receiving side of the equipment fielding early in my career as a young Noncommissioned Officer (NCO). I was always impressed by the pride and professionalism shown by Soldiers, civilians and contractors from the CECOM LCMC. That pride and professionalism is still here today, as I always hear great comments from the Soldiers and Commanders in the field during my site visits to the installations throughout the United States and worldwide.

In October 2008 at the Association of the U.S. Army convention in Washington, D.C., Secretary of the Army Pete Geren announced that the Army would celebrate 2009 as the "Year of the NCO". This is an opportunity for the NCOs to be recognized for their accomplishments as leaders and for the sacrifices they have made for our nation. Although there is only a small military presence currently within the CECOM LCMC, our NCOs are still leading from the front and taking on key roles as they work with the different Directorates and Project Managers to field and sustain C4ISR equipment. The official kickoff and unveiling of the Year of the NCO poster was held on February 23, 2009 at Pruden Auditorium at Fort Monmouth. We have hosted many other events so far this year and conducted a Year of the NCO fun run hosted by the U.S. Army Garrison Fort Monmouth on June 12, 2009.

Along with this being the Year of the NCO, the CECOM LCMC and Army Team C4ISR have also

taken an active role in giving back to the Warriors who have been wounded in action in Operation Iraqi Freedom and Operation Enduring Freedom by providing hiring opportunities within the organization. MG Via and I are committed to the Wounded Warriors who have placed themselves in harm's way in support of our great nation. We work closely with Walter Reed Army Medical Center and the Warrior Transition Units within the National Capitol Region to bring Soldiers on as Interns while they are in their final phase of treatment. We have hosted two site visits at Aberdeen Proving Ground, Md., for these Warriors as well as a job fair at Walter Reed Army Medical Center. I would like to personally thank the workforce within Army Team C4ISR for supporting this great effort to provide hiring opportunities for these Wounded Warriors.

Finally, we hosted a CECOM LCMC and Army Team C4ISR nominative conference June 9 to 11 at Fort Monmouth. This was a great opportunity to share information about the systems and technologies provided by Army Team C4ISR with the senior Command Sergeants Major and Sergeants Major from the Army Materiel Command and the Signal Regiment.

With all the great briefings from Program Executive Offices, the Project Manager for Warfighter Information Network-Tactical, the Logistics and Readiness Center, our command's Aberdeen Proving Ground (Forward), the Communications-Electronics Research, Development and Engineering Center and others, and also the Joint User Interoperability Communications Exercise demonstrations, these senior leaders left with a greater appreciation and understanding of the support we provide to the joint Warfighter.

It is a privilege to be the Command Sergeant Major of the CECOM LCMC and I look forward to a great working relationship and continuing our common goal to provide C4ISR support in support of Overseas Contingency Operations. At the end of the day, it truly is "All About the Soldier".



## ABOUT THE AUTHOR

CSM Tyrone Johnson is the command sergeant major of the CECOM Life Cycle Management Command. He assumed the post in October of 2008 after completing his assignment at the United States Army Sergeants Major Academy at Fort Bliss, Texas.

**Spectra** is an authorized publication for members of the Department of Defense. Contents of Spectra are not necessarily the official views of, or endorsed by, the U.S. Government, the Department of Defense, the Department of the Army or the CECOM Life Cycle Management Command (LCMC). The editorial content of this publication is the responsibility of the U.S. Army CECOM LCMC Public Affairs Officer, Mr. Henry Kearney, ATTN AMSEL-IO Fort Monmouth, NJ 07703-5016. Spectra is printed by using offset printing by the Document Automated Production Services - Great Lakes: 2530 Paul Jones Street, Building 2A; Great Lakes, Ill. 60088

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# BRAC to be catalyst for change

COMMENTARY

**By Rebecca Shinneman**  
*Communications Director, CECOM LCMC*

BRAC 2005 is different from any prior Base Realignment and Closure. Impacting 50 active installations and composed of base closures and a number of major realignments across our Army, this BRAC will accomplish two additional key goals: 1) transforming DoD by more closely aligning its infrastructure with defense strategy, and 2) enhancing joint operations. In doing so, the Army is pursuing the most comprehensive transformation of its forces since the early years of World War II.

This transformation will produce evolutionary and revolutionary changes designed to improve both Army and Joint Force capabilities to meet current and future full spectrum challenges. U.S. installations overseas will decline in numbers and military and Army civilian personnel will return from overseas locations in Europe and Asia to bases in the continental United States.

In addition to the military unit/organizational relocations, BRAC 2005 will close five headquarters installations, three chemical depots, four ammunition plants, and 176 Army Reserve and 211 Army National Guard facilities, while creating Training Centers of Excellence, Centers of Excellence, Joint Technical and Research Facilities, new Armed Forces Reserve Centers and increasing productivity of armaments and equipment. There will be several major moves of federal civilian and contractor personnel to support mission relocations, which will include six major realignments and four new Brigade Combat Teams.

At the CECOM Life Cycle Management Command, headquartered at Fort Monmouth, N.J., the command and its Army Team C4ISR (Command, Control, Communications,

Computers, Intelligence, Surveillance and Reconnaissance) strategic partners – Program Executive Office – Command, Control and Communications -Tactical (PEO-C3T), Program Executive Office – Intelligence, Electronic Warfare and Sensors (PEO-I EW&S), and the Communications-Electronics Research, Development and Engineering Center (CERDEC) – are using BRAC as a catalyst to transform organizations, facilities, and people.

Charged with executing a phased move of personnel, functions, and equipment to Aberdeen Proving Ground (APG), Md., and other BRAC-mandated locations over a three-year period, the command must ensure mission continuity for ongoing Overseas Contingency Operations while constructing and relocating to a new \$800 million state-of-the-art Information Technology (IT) campus at APG in 2010 - 2011. In commenting about BRAC, MG Dennis L. Via, Commanding General CECOM LCMC, stated “the most critical part of this transformation is our people. The facilities will be built, and the equipment will be moved; however, it is our people – Soldiers, Army civilians, and contractors – who will enable the Center of Excellence to become a reality.”

The command’s human capital strategy is focused on maximizing job enrichment opportunities for a new multi-functional workforce operating in first-rate facilities. As of May 26, 2009, a total of 429 Advance Party personnel are currently at APG, and 528 additional employees have volunteered to move there this summer. By the end of the 2009 calendar year, Army Team C4ISR expects to have approximately 1,400 personnel working at APG.

At the new Army Center of Excellence for C4ISR campus, CECOM LCMC and Army Team C4ISR will organize its mission into “Domains” where like mission and business processes are physically co-located to dramatically

enhance and improve mission efficiency and effectiveness while providing a collaborative work environment for our employees. Laboratory and SCIF’ed facilities will complement each other through co-location within a nine building campus setting as opposed to being spread over 40 buildings currently at Fort Monmouth.

The new mission domains are the pillars of the Center of Excellence. Each provides traditional program management functions, as well as research and development supported by functional representatives from across the commodity life cycle. The Center of Excellence will change the workplace with green spaces, vistas, and lots of daylight. The new work environment will help develop a more open, innovative and professional environment where employees will have the opportunity to cross train, have flexible work schedules, and conduct decentralized operations in a high-tech IT environment.

On St. Patrick’s Day, March 17, 2009, approximately 40 Army senior leaders and 14 Army interns from the CECOM LCMC and the CERDEC observed the one-year anniversary of the start of construction of the new Center of Excellence campus. During the anniversary event, Via emphasized that “we are leveraging BRAC as a catalyst for change... [and to] reconstitute the command and determine what capabilities we need to support the future force in 2015 and beyond.” The emerging of the new campus represents a new beginning for the Army and a once-in-a-generation investment in a center of excellence that will be unequalled anywhere in the world.

CECOM LCMC is leveraging BRAC 2005 to become the premier DoD leader in providing C4ISR systems and capabilities to the Joint Warfighter, and to posture itself and its strategic partners for the future to better meet the challenges of complex 21st century missions.



U.S. Army Photo

*In this photograph taken in March -- just a little more than a year after the March 2008 groundbreaking for the "Phase One" Army Team C4ISR campus at Aberdeen Proving Ground -- construction was well ahead of schedule and is now more than half complete.*

## **'Phase One' ahead of schedule**

**Andricka Thomas**  
*Forward Correspondent*

ABERDEEN PROVING GROUND, Md. — Just a little more than a year ago, Aberdeen Proving Ground marked the beginning of change on the installation at a groundbreaking ceremony for a nearly \$800 million construction project as a major part of implementation of 2005 Base Realignment and Closure (BRAC) law.

Now, the multi-million dollar project is well underway and more than 54 percent complete, according to Michael Vetter, CECOM Life Cycle Management Command, director (G4), Logistics and Engineering.

The project will house elements of Army Team Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance, or C4ISR, slated to relocate to APG.

The project represents the 'Phase One' portion of the entire Army Team C4ISR construction program. Eight of the nine 'Phase One' buildings have begun construction, according to Vetter.

"At this point, most of the work left on the 'Phase One' campus is interior work," said Vetter. That includes the installation of utilities, installation of information technology capabilities, walls, carpet, furniture and other essentials.

Construction is ahead of schedule with 'Phase One' buildings scheduled to be avail-

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# Manifest



## *Future Army C4ISR facilities a manifestation of many goals*

**By Ed Lopez**  
*CECOM Correspondent*

To a casual observer, the concrete and construction cranes that are giving shape to a new campus at Aberdeen Proving Ground, Md., may seem just another building project asserting its presence on the skyline.

Underlying the construction clatter, however, is not just an emerging campus but an operational concept that MG Dennis L. Via calls a "once-in-a-generation investment" by the Army and the Department of Defense and part of the Army's transformation for future operations.

As commander of CECOM, MG Via has overseen the transition to the new campus that will ultimately encompass 13 new buildings, one renovated building and 2.5 million square feet of space. The campus will be the new home of Army Team Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) as Fort Monmouth approaches its 2011 closure as part of the implementation of the 2005 Base Realignment and Closure (BRAC) law.

The emerging campus at Aberdeen reflects years of meticulous planning that has included optimizing work space for greater collaboration and ensuring employee amenities such as adequate food services and a child care center. Buildings have been designed with quality-of-life advantages for employees such as more natural sunlight, as well as energy and environmental considerations.

Not the least of the ongoing campus planning and construction involves the transfer of the sophisticated technological infrastructure that has been built up over the years at Fort Monmouth. Through the decades, Fort Monmouth C4ISR organizations have played a role in various

technology achievements that included the first "walkie-talkie" as well as research into radar, satellite communications, laser range-finding and night-vision.

"There's been a lot of thought given throughout this whole process to ensuring that we prepare for a proper move-in into the facilities," said Michael Vetter, director (G4), Logistics and Engineering, CECOM Life Cycle Management Command.

"We have to get the laboratories up and running and get all our equipment in so that we are operationally capable of performing our mission by the mandated BRAC deadline," he added.

The technological prowess and legacy of Army Team C4ISR organizations have added another dimension to the BRAC move.

"From a facilities standpoint, one challenge we've had is that there is an incredible amount of information technology—whether it's infrastructure or equipment—that has had to be accommodated within the campus itself," Vetter explained.

"My office has a good working relationship with the G6 (CECOM LCMC Chief Information Office) and we've worked through a lot of issues.

"There has been a lot of discussion and planning and thought about what kind of networks we're going to have, who's going to put in that infrastructure, and how we put that into the buildings and marry it up with the different organizations," Vetter said. "We've worked hard on how we'll move our information technology structure down to Aberdeen without breaking or losing anything along the way."

Fortunately, Vetter added, the bulk of the planning required for such a significant move took place in the years immediately following the BRAC announcement in May 2005.



# Destiny



At Fort Monmouth, the various Army Team C4ISR operations are scattered among some 60 to 70 buildings. At Aberdeen, there will be far fewer buildings and mission components will be much more compact, resulting in a work environment in which most personnel will be within a half-mile of each other.

Aside from constructing a campus to house the C4ISR information technology and infrastructure, the Aberdeen buildings are also designed to be appealing and efficient for the workforce. In certain areas of the hallways at Army Team C4ISR headquarters at Fort Monmouth, samples of carpeting, paneling and interior designs are on display for input from passers-by.

"We wanted to make sure it wasn't just a gray box, but something that employees could take some pride in where they were working," Vetter explained. "We wanted to create workspace areas that had some color and some variation."

"We're also looking at a variety of furniture designs that complement an open, work-space environment that will allow employees to collaborate better with each other and other sections."

Building floor plans were developed so that employees would have more opportunity to enjoy natural sunlight and exterior views.

"Most of the functional aspects of the buildings—restrooms, hallways, break rooms, stairwells—are located within a central core, while work areas are toward the outside windows with views to the outside so you don't feel you're in a concrete box," Vetter said. "It's that view of the outside that contributes to the quality of life."

Throughout the campus, every floor will have at least two large break rooms with microwave ovens, refrigerators and areas where employees can grab a cup of coffee. In addition, at least four different locations within the campus

will accommodate some form of food service. The Aberdeen Proving Ground Garrison has plans for additional child-care facilities.

To streamline the expected flow of traffic into and within the Aberdeen installation, the U.S. Army Corps of Engineers has been engaged in planning and executing significant upgrades. Existing gates to the installation will be expanded. The Highway 715 gate has been modified to be the main entrance to Aberdeen Proving Ground for the C4ISR campus. A recently completed project has expanded that gate to five incoming car lanes and two lanes specifically for trucks.

Gary Schilling, program manager with the Corps of Engineers Aberdeen Integration Office, said \$45 million has been allocated for infrastructure upgrades, which includes improvements to intersections and roadways. In addition, upgrades are planned to the information technology backbone.

"It's one of the Army's premier installations and we want to make sure the infrastructure is adequate to support the mission," Schilling said. "This community is very excited about C4ISR [organizations] moving down here."

In a separate process, the Aberdeen Proving Ground Garrison has been in discussions with the state of Maryland and Harford County, in which Aberdeen is located, to perform roadway improvements outside the installation.

Energy and environmental considerations were also an integral part of the campus planning. The benchmark is a standard known as Leadership in Environmental and Energy Design (LEED). Construction contractors must meet the LEED Silver Certification level, which incorporates a host of objectives.

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Art courtesy of Jacobs Engineering

An artist's concept of the front entrance of the Command and Control and Communications Network Transport-East (C2CNT-East) facility at Aberdeen Proving Ground.

## Groundbreaking for Phase Two being prepared

**Andricka Thomas**  
Forward Correspondent

ABERDEEN PROVING GROUND, Md. — Change is evident at Aberdeen Proving Ground with the installation buzzing with sounds of cranes and forklifts as it prepares to accommodate relocating employees as a result of implementation of the 2005 Base Realignment and Closure law.

The Army recently awarded a \$102,015,000 contract to James G. Davis Construction Corp., to build the Command and Control and Communications Network Transport-East facility at APG. This is the first of five construction contracts to be awarded to build the Army Team Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance "Phase Two" campus program facilities.

The C4ISR construction projects were divided into two phases to encourage a competitive bidding process among contractors, said Michael Vetter, CECOM Life Cycle Management Command, director (G4), Logistics & Engineering. The "Phase Two" program has been divided into five construction contracts, each one accounting for each building to be constructed or renovated. This allows small businesses the best opportunity to participate in the bidding process, Vetter said.

"C2CNT-East is the first of four new buildings to be constructed as part of the 'Phase Two' program," said Vetter. A fifth building will be renovated and improved under one of the construction contracts.

Ground was broken on the "Phase One" Army Team C4ISR campus project last year on

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March 17 with that project already more than 54 percent complete, according to Vetter.

The "Phase Two" program will consist of the following buildings: C2CNT-East, Consolidated North, Building 5100 Power and Cooling, a Joint Satellite Engineering Center Compound, and a Command and Control Integration Facility.

C2CNT-East is scheduled to begin construction by the middle of May, according to Vetter. These construction projects were created in response to BRAC law mandated by Congress, which dictates that well over 7,000 Army Team C4ISR military and civilian personnel and support contractors will relocate to or be hired at APG. BRAC law requires all organizations slated to relocate to be completely moved by Sept. 15, 2011.

"The [construction] timelines have worked in our favor thus far," said Vetter. He reports the "Phase One" project is ahead of schedule and on budget. He said he looks forward to the beginning of "Phase Two."

The entire C4ISR campus will total 2.5 million square feet of office and lab space upon its completion. "Phase Two" will provide workspace for approximately 2,400 personnel and will account for a little more than one million square feet of the C4ISR campus in building construction and renovations, according to Vetter. The C2CNT-East building will be the largest single building on the C4ISR campus.

C2CNT-East is designed to accommodate 1,900 personnel in 500,000 square feet of office and research space. The facility will house the Communications-Electronics Research, Development and Engineering Center's Satellite and Terrestrial Communications Directorate, the CECOM LCMC Logistics and Readiness Center's Communications Directorate, elements of the Software Engineering Center and some project and product management offices of the Program Executive Office for Command, Control and Communications-Tactical, or PEO C3T.

"The idea is to create synergy among the organizations by centrally locating them with other organizations with similar functions," said Vetter. "The leadership saw the move to APG as not only an opportunity to configure new build-



Art courtesy of Jacobs Engineering

*In this artist's rendering, the C2CNT-East facility is the first of five construction contracts to be awarded to build the Army Team C4ISR "Phase Two" campus program facilities.*

ings for maximum efficiency, but to maximize organizational synergy as well." The intent is to position functional areas, or 'domains,' together to better track products through their entire life cycles, from concept to combat, Vetter said.

"For example, we positioned all personnel who work with sensors together so the 'sustainers' can have dialogue with the 'R&D experts'," he continued. "This will provide better communication avenues between the organizations and ultimately deliver a better product to the Warfighter faster."

Vetter said he has enjoyed a good working relationship with the Philadelphia District Corps of Engineers. The Philadelphia District is responsible for overseeing all Army Team C4ISR "Phase One" and "Phase Two" campus construction and engineering activities.

Unlike the "Phase One" project, the "Phase Two" projects will be completely designed before construction begins. This process is referred to as "Design-Bid-Build," according to Vetter.

"Phase One" was a 'Design-Build' project, where the contractor designed plans parallel to building efforts," explained Vetter. "This allowed us to move a bit faster to get the project started. However, with 'Phase Two' we decided to have the designs complete, then bid and begin con-

struction. The 'Design-Bid-Build' process in the 'Phase Two' program will allow us to provide a more specific scope of work and get a better handle on costs," Vetter said.

The JSEC Compound will house elements of the CERDEC and PEO Enterprise Information Systems, while the C2 Integration Facility will accommodate elements from PEO C3T. "Originally, we were planning to renovate more buildings, but due to construction timeline constraints for the move of the Ordnance Center and School to Fort Lee, it wasn't possible," said Vetter.

"With the exception of the C2 Integration Facility, we expect 'Phase Two' buildings to be "move-in-ready" by approximately Feb. 15, 2011," said Vetter. The C2 Integration Facility is scheduled to be available for move-in by about July 2011. Vetter said the move-in dates are dependent upon construction progress; furniture delivery and set up; equipment, access control systems, and information technology installations; as well as Secure Compartmentalized Information Facility certifications.

"Relocating employees can look forward to a brand new facility, outfitted with state-of-the-art IT [information technology], new furniture and break areas and will enjoy a close knit community at the C4ISR campus," Vetter said.

**"Destiny" From Previous Page**

The roofs of buildings will have reflective surfaces to reflect heat away from the buildings. The new auditorium is built partly into the ground and will have dirt and grass as part of its roof.

Several of the facilities on the campus will use geothermal power, which is derived from the internal heat of the earth. Moreover, the compact nature of the campus itself fosters more walking and less driving. Extensive landscaping using native species of trees as well as a planned shore

park area is intended to increase the quality of life on the campus.

The two-phase construction of the new Army Team C4ISR home will eventually provide 2.5 million square feet of space for more than 7,000 military and civilian personnel along with support contractors.

Army officials broke ground March 17, 2008 on "Phase One" of the campus, which is scheduled for completion in the fall of 2010. "Phase Two"

of the construction was scheduled to begin in June 2009 and will consist of four new buildings and the renovation of one existing building.

The Phase One construction was just over 54 percent complete as of May 2009 and is ahead of schedule, according to Vetter.

"I think what will surprise a lot of the workforce is how close the community will be," Vetter said, "and how much it will foster a greater sense of community among the employees."



## Spectra People Power Focus: Bill Buttner

# Center manager sets high standard in Iraq

By Tim Dzyacky  
SEC Correspondent

The CECOM Life Cycle Management Command (LCMC) Regional Support Center's (RSC) manager in Baghdad must wear two hats, one as the manager of the CECOM Software Engineering Center (SEC) Field Software Engineering Office, and the other as manager of the Electronic Sustainment Support Center. In this dual-hatted role, job assignments span software support, hardware maintenance and management of Logistics Support Areas (LSAs).

Over a recent 12-month period, William "Bill" Buttner took on the relentless challenges that come with the job of serving as the RSC Manager in Baghdad.

"If you were putting together a dream team, this is the guy you would want on your team," said Roger Moore, Senior Command Representative, Readiness Directorate, and CECOM LCMC LRC.

"Throughout our time in Iraq, everyone had confidence in Bill at every level in the chain of command. I know the guy is human, but if he ever made a single mistake out there it had to be a minor one," said Moore.

In addition to managing the technical and functional activities under the direction of the CECOM Field Sustainment Support Division, Buttner also served as the Government Task Lead for the Rapid Aerostat Initial Deployment (RAID) and the Base Expeditionary Targeting and Surveillance Sensors-Combined (BETSS-C) programs.

The RAID system utilizes a variety of electro-optical/infra-red sensors, radars and other detectors to provide sustained panoramic surveillance from either the top of a tower or elevated by a blimp-like aerostat (a tethered, helium filled balloon). The system is used to both detect insurgent activity and to call in



Courtesy Photo

*Bill Buttner arriving for duty as the new RSC Manager in Baghdad.*

airstrikes and other responses.

Working in conjunction with RAID, the BETSS-C system aggregates data gathered from towers, aerostats, unmanned aerial vehicles and ground sensors and then displays the data on a digital map for use by tactical commanders. Because the system keeps a record of incoming data, Soldiers can perform forensic backtracking: for example, viewing area insurgent behavior prior to an improvised explosive device (IED) detonation.

"Bill's contributions to the RAID and BETSS-C were enormous," said Gary Clerie, Chief, Field Software Engineering Office, who is in charge of CECOM LCMC field software and support for C4ISR systems.

Bill worked extensively with the RAID Product Office and Soldiers on the ground to improve system availability, and he was deeply involved with the BETSS-C fielding.

Buttner had the lead role in both planning the infrastructure and refining the BETSS-C theater sustainment strategy, as well as the fielding presently underway in Iraq and Afghanistan.

As RSC Manager, Buttner was responsible for providing software and hardware maintenance and support for more than 135 critical force protection, communications and intelligence systems. Additionally, he was in charge of a land area of approximately 11 acres including maintenance facilities for C4ISR repairs, three LSAs housing more than 70 people, and an eight-bay Counter Radio-Controlled IED Electronic Warfare (CREW) facility.

Managing approximately 600 contractors and Department of the Army civilians, Buttner was responsible for incident reporting in the case of a mishap or attack as well as personnel status reporting. "In a war zone, personnel accounting is crucial," said Clerie.

"You have to know where your people are. In the case of a crisis such as an explosion, you have to be able to account for your people and then take the necessary actions."

Buttner served as the Contracting Officer Representative for the Field Software Engineering Office, providing oversight and management to both field software engineers and digital system engineers. In this capacity, he guided their efforts in all activities related to Operations Iraqi Freedom and Enduring Freedom. He also worked with the Multinational Corps-Iraq Command and Control Operations cell, finalizing a \$14 million Joint Acquisition Review Board submission package to fund 27 Field Software Engineers.

"Bill is the kind of guy who puts in 100-hour work weeks and never complains," added Moore. "He takes ownership of everything assigned to him and more. He knows how to delegate tasks and he keeps people funneling back through him to ensure everybody is meeting their requirements. His contributions will be hard to beat – those are tough shoes to fill."

### "Phase One" From Page 6

able for occupancy August through November of 2010, a full ten months before the BRAC law implementation deadline of Sept. 15, 2011.

The dates of completion are dependent on the contractor's progress and the time allotted to install furniture, phones and an access control system, and to obtain appropriate certifications for Secure Compartmentalized Information Facilities.

All of the significant buildings in the cam-

pus, 'Phase One' and Two, should be ready by February 15, 2011, according to Vetter.

"Employees can look forward to working at state-of-the-art facilities," said Vetter. The buildings will accommodate many quality of life and advanced technical capabilities that have been considered in the engineering process, said Vetter.

The buildings will be outfitted with fiber connections for optimal computer network con-

nection speed.

'Phase One' buildings will be equipped with two large break rooms on every floor, providing space for a microwave, refrigerator, sink, and a space for employees in each break room to eat lunch, said Vetter.

There will also be a concession area in four locations throughout both phases of the Army Team C4ISR campus for employees to grab a bite to eat.

# Notional movement proves concept



**By Josh Davidson**  
C3T Correspondent

The notional arrival of 18th Fires Brigade of the Army's 82nd Airborne Division to the European Command (EUCOM) Area of Responsibility from its headquarters in Fort Bragg, N.C., validated the Army's Network Service Center (NSC) initiative to seamlessly transition a Warfighting unit from peace to war while ensuring continuous access to its battle command information and applications.

Efforts from the NSC Operational Validation (OPVAL) held in April through May at both locations will enhance the ability of all Army units to update and retain warfighting data and prepare for combat as they travel from one location to the next.

"The whole goal of the NSC is that the communications infrastructure for the unit is absolutely transparent," said COL Joe Puett, the OPVAL exercise director.

Units will retain a single identity -- e-mail addresses and phone numbers -- as they move from garrison, to training centers, to staging theaters and to combat zones. Additionally, the NSC is an enterprise-based construct that allows Soldiers to view intelligence data and actively participate in operational battle updates from the area of responsibility they are entering as they complete other pre-deployment activities.

"They are able to talk and see and participate in battle updates with the theater that they are getting ready to join," Puett said. "Even while their equipment is on board a ship their data and applications are actually being hosted in an Area Processing Center (APC), so that they are able to keep updating their plans and maintain their operational tempo, so that when they hit the ground, they are ready to begin fighting."

An APC is a concentration point for inter-

*Incorporating a "crawl, walk, run" approach, the first validation exercise included a notional deployment of the 18th Fires Brigade, 82nd Airborne Division from Fort Bragg, N.C. (ABOVE), simulating a movement to Europe. This movement was facilitated by Area Processing Center computers (TOP RIGHT) and monitored at a Tactical Operations Center (BOTTOM RIGHT) in Grafenwoehr, Germany.*

connectivity among installations, a location for common servers and enterprise services, and an entry point into the Army enterprise through an enhanced security gateway, according to the Program Executive Office for Enterprise Information Systems (PEO EIS).

Though the Army provides information technology services and support at numerous locations throughout the world and more than 440 domestic sites, in the next few years 80 percent of the Army will be located in the United States, according to the Chief Information Officer, CIO/G6.

Over the next three years, the aforementioned Global Network Enterprise Construct (GNEC) will support the Army's effort to consolidate its information technology enterprise to a constellation of NSCs located across the globe.

Resident within the GNEC will be electronic identification of Soldiers, their units and their information systems and requirements. The construct will allow users to rapidly tailor and task organize units and their information requirements.

This construct was established to revolutionize the manner in which units train, mobilize through theaters, and arrive in their area of responsibility ready for combat, Puett said.



Presently, with each move to new locations, units must disconnect equipment from the network before they move. Then, they must plug it in again and establish new electronic identities with every move. Units do not have access to their data while their equipment is in transit.

"The situation has changed. The ground has changed. Their operational tempo has been interrupted as they transition from one theater to another," Puett said.

The goal of this construct is to ease that transition, first, to allow the unit to perform early collaboration with the unit to which they will be attached in a war fighting environment, Puett said. The second reason, is to establish a single identity as the units move from one theater to the next. Lastly, it allows them to fight upon arrival with absolutely no loss in situational awareness or the operational tempo, he said.

This particular OPVAL was the first in which its participants built an infrastructure to support the three aforementioned objectives. It was "During the OPVAL, the unit both collaborated with a joint task force in EUCOM from their garrison environment and actually moved out to the field in Fort Bragg where they were collaborating as if they have actually deployed into that particular theater of operations," said Puett.

This portion of the OPVAL was carried out through a series of phases that began in March and continued in April through the Austere Challenge which concluded in May.



## Spectra People Power Focus: SGT Matthew R. Phelan

# No one is more professional than he

**Kristen Kushiya**  
CERDEC Correspondent

He always considered himself the quiet guy in the back of the classroom—not one to make a fuss, flying under the radar.

But SGT Matthew R. Phelan is not at the back anymore. He is making up for his high school anonymity by distinguishing himself as the U.S. Army Research, Development and Engineering Command (RDECOM) Noncommissioned Officer (NCO) of the Year.

On March 30, Phelan reported for duty at the Edgewood Area of Aberdeen Proving Ground (APG), Md. where he spent four days competing with NCOs from across RDECOM.

Phelan represented the Communications-Electronics, Research, Development and Engineering Center (CERDEC) at Fort Monmouth, N.J., one of RDECOM's nine subordinate organizations.

The competition tested the NCOs' physical, intellectual, soldiering and leadership abilities. Phelan, a communications technician with the CERDEC Intelligence & Information Warfare Directorate (I2WD), trained for nearly 20 days with his sponsor, SSG Daniel E. Smith, also from I2WD.

While Phelan's experience as a twice-deployed Soldier to Iraq with the 3rd Infantry Division increased his leadership and soldiering abilities, he had to focus on additional skills to win. Still, CERDEC NCOs were confident they had a winner.

"This takes a lot of preparation and mental toughness to get ready to compete," said Smith, "and Sergeant Phelan has done a great job staying focused."

In addition to the Army Physical Fitness Test, Common Task Training, weapons tests and obstacle course, competitors took a 25-question, knowledge-based test focusing on Army history and leadership, followed by an essay on one of three provided topics.

Phelan's essay focused on Medal of Honor recipient SFC Paul R. Smith, a Soldier with B Company, 11th Engineering Battalion, 3rd Infantry Division, who was killed in action while protecting his men enroute to Baghdad International Airport in April 2003.

*"This is a great learning experience in **RDECOM...**"*  
-- SGT Matthew R. Phelan



"Since I was with the 3rd ID, I wrote about Sergeant First Class Smith," said Phelan. "He made the ultimate sacrifice to defend his Soldiers and not let his mission fail. All of the values and creeds that are instilled in us from Day Zero in the Army are what he showed that day."

Phelan found the board review to be the most challenging because it was a personally intimidating undertaking for the once-quiet kid. He stood front and center being interviewed by a panel comprised of CSM Hector Marin, three sergeants major and one first sergeant who drilled him on a variety of questions ranging from leadership and Army history to current events.

After successfully completing the board interview, it was determined that Phelan took highest marks in the competition. He now has his sights set on the next level, this fall's Army Materiel Command (AMC) NCO of the Year competition. "I know the mistakes that I made this time, and I look forward to the next round so I can improve on those mistakes," said Phelan.

"There's no doubt in my mind that Ser-

geant Phelan will come away with first as the AMC NCO of the Year," said Smith who will be part of a team of RDECOM and CERDEC NCOs helping to prepare Phelan for the next round.



"I'm excited. This is a great learning experience in RDECOM, and now I'll get to hang out with more Soldiers," said Phelan.

Phelan found training for the initial competition difficult due to the small number of active duty Soldiers within CERDEC. Yet their support was invaluable, he said. Smith volunteered to sponsor Phelan because he saw it as his duty to train, lead and help his Soldiers in any way he could.

"To win a competition like this, it takes a lot of personal drive. But it also takes a lot of good leadership," said SFC Eric Scheidt, CERDEC Operations NCO. "Sergeant Phelan has outstanding leadership with Staff Sergeant Smith and Sergeant First Class Tanacea, both of whom are great

NCOs and have helped mold him and get him to where he needs to be."

"With 2009 being the Year of the NCO, it is a very significant accomplishment for Sergeant Phelan to win NCO of the Year," said Gary Blohm, CERDEC director. "We are very proud of him."

Phelan arrived at Fort Monmouth in October 2008 and has since provided a Soldier's perspective to the scientists and engineers at CERDEC I2WD who develop rapidly deployable technology.

"Sergeant Phelan has proven to be a valuable asset to CERDEC I2WD by providing our Soldiers and civilian employees with the leadership, commitment and professionalism required to ensure that each mission is accomplished safely and efficiently," said Anthony Lisuzzo, director of I2WD.

"It's an honor for the CERDEC to be associated with an individual like Sergeant Phelan who has gone above and beyond anything we've asked him to do in order to achieve RDECOM NCO of the Year," said Blohm.

# Radio inventory provides for well of versatile solutions to warrior needs

By Josh Davidson  
C3T Correspondent

For a cook at a mess hall or a forward observer providing intelligence in the mountainous terrains of Afghanistan; a radio is a Warfighter's lifeline.

"Voice communications is first hand and essential," said MSG Daniel Massie, of the Army's 2nd Stryker Cavalry Regiment. "You're able to listen to that individual on the ground and really assess where he is coming from and execute your course of action."

Today, radios provide communications in the confines of urban Iraq, while satellite communications of the Warfighter Information Network-Tactical (WIN-T) Increment One provide battalion level and above Warfighters with the satellite communications necessary to communicate in the mountainous terrains of Afghanistan.

When integrated within WIN-T Increment One, High Capacity Line-of-Sight (HCLOS) radios combine communications within a user's sight range or line-of-sight or those which expand beyond their line-of-sight.

Radios are a necessity for the Army in both Iraq and Afghanistan. Commanders who "see" and share a common view of the battlefield through today's digitized systems, need to "hear" the battle with a radio. Radios provide the close human interaction that a computer screen might lack. They have a wide range of uses in theater today such as coordinating a raid in a close-packed environment or communicating the commander's intent over sizable terrain.

The High Capacity Line of Sight (HCLOS) radio is fielded by PM Command Posts (PM CP) in conjunction with WIN-T fieldings and installed with a HUMVEE shelter-mounted system. It connects to WIN-T Increment One through a fiber optic cable router, said James K. Goon, product director for Tactical Radio Communications Systems (PD TRCS), the organization to which HCLOS is assigned. HCLOS is used for long haul operations and sent through the WIN-T Increment One Ku band, so that users can communicate either within their scope of vision or even across the globe, Goon said.

With Increment Two, Warfighters at the battalion level will receive the Soldier Network Extension (SNE) for over-the-horizon communications and HCLOS capabilities for the ability to communicate within their field of vision. Company level Warfighters will be fielded only the SNE for beyond line-of-sight communications.

Today, WIN-T Increment One provides bat-



U.S. Army photo

*The Single Channel Ground and Airborne Radio System (SINCGARS), shown here in a project manager, Command Posts (PM CP) file photo taken at a Combat Training Center, is designed to be reliable, secure and easy to maintain.*

talion-level and above Warfighters with the ability to connect to the Army's digitized systems, voice, data and video via satellite Internet connectivity. Residing on this at-the-quick-halt communications pipe are battle command systems, which allow Warfighters to obtain real-time updates of their buddies' whereabouts over a topographical map, plan and execute fires, manage the airspace and share information such as intelligence, weather and terrain.

Line-of-sight communications will remain a component of the WIN-T program, as future increments are fielded.

When surrounded by tall buildings in an urban, constricted environment a Soldier might not be able to establish the low takeoff angle necessary for satellite communications, Massie said.

"In this case, you must rely on other means of line-of-sight and beyond line-of-sight communications, such as HF communications, which is capable of beyond line-of-sight by bouncing the powerful signal off the ionosphere at steep angles," he said.

"The advancements in automatic link establishment and the high power of HF allows for more reliable voice than the traditional FM communications," he added.

TACSAT capabilities in Harris HF radios also

allow the regiment to push data to extended ranges not available through FM communications.

The integration of beyond line-of-sight and line-of-sight communications was useful to SSG Jose Arias during his recent deployment to Iraq, as it allowed for a back up communications system when one line went down. Synchronizing both forms of communications provides alternate paths for routing shared information.

"As a Signaleer, you always want to have more than one form of communication and that's exactly what that package enables; at least down at the squadron level, to be able to execute," said Arias, also of the 2nd Stryker Cavalry Regiment, headquartered in Vilseck, Germany. "If your line-of-sight shot goes out, you still have that satellite path. So, you can push some data out and receive some; not at full capacity of course since they are both linked in to each other," said Arias.

But, it still enables you to keep that live feed in."

If the satellite link ceases to function, line-of-sight communications is available to pass a finer amount of data back and forth between a Soldier and their higher headquarters or the next data path, he said.

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## Civilian builds career with workhorse radio

By Ed Lopez

CECOM Correspondent

As he approaches nearly 40 years of government service, James G. Bowden's career has been tightly interwoven with the development and evolution of an Army "workhorse" that is notable within the Department of Defense.

Bowden is the Army's technical lead for the Single-Channel Ground and Airborne Radio System (SINCGARS) family of radios, a versatile and ubiquitous product that has been in every combat action since 1988.

In his oversight role of SINCGARS over 20 years, Bowden has seen a steady march of product enhancements, a steep ramp-up of production, a relatively flat cost structure and a continuous drive for new capabilities.

"SINCGARS is the highest volume electronics production program in the Department of Defense—and has been for a long time," said Bowden, whose encyclopedic knowledge of the radio is reminiscent of a high school coach who knows every trophy and victory his team has earned.

With its Very High Frequency (VHF) band—the most robust band for voice communications—SINCGARS remains the main voice control radio for Soldiers at battalion level and below.

"Voice is what the commander wants on the battlefield," Bowden states in his authoritative tone.

"Data is well and good for planning purposes, but when the fight starts commanders use voice. Commanders like to hear the stress in their troops' voices when they are talking to them because it tells them a lot about what's going on with the battle. And you can't get that



Photo by Michael Allison

*James G. Bowden has spent a significant amount of his career as the project lead for the Single-Channel Ground and Airborne Radio System (SINCGARS) family of radios. He is pictured with the VRC-90 with ASIP RT-1523F, which can increase battlefield communications up to 35 kilometers. The RT, when dismounted and used as a manpack radio, weighs eight pounds with a battery. The initial SINCGARS Non ICOM version of the radio with a KY-57 COMSEC device and two batteries weighed 30 pounds.*

feeling from data, so they will never give up voice. Voice will always be there, regardless of anything else that happens."

Using SINCGARS, with its secure, jam-resistant, tactical communications for voice, data and video, commanders have the ability to absorb various aspects of battle. The radios are available for manpack, airborne and vehicular use.

The radio's longevity is due to a software-based design along with an extremely flexible and adaptable plug-in architecture. Those factors have allowed SINCGARS to grow and anticipate the Army's communications needs.

SINCGARS development is done under the Army's Project Manager Command Post, Product Director Tactical Radio Communications System (PD TRCS). That organization is under the Program Executive Office Command, Control and Communications Tactical (PEO C3T) located at Fort Monmouth.

"It's loved by the troops," Bowden said of SINCGARS. "They are extremely reliable. And that's part of what the troops love about them. They know that when they turn them on they're going to work."

Over the years that Bowden has shepherded SINCGARS, one of the highlights was a significant ramp-up of production arising from Army operations in Iraq and Afghanistan. In a war like Iraq with no defined front lines, communications is vital even at the level of a single vehicle. The Army decided that the authorized level of SINCGARS should increase from about 250,000-260,000 radios to 581,000.

"Within a six-month period, production ramped up from about 600 a month to about 6,000 and has been at 5,000 to 6,000 radios since then up to today," Bowden said. "We have produced about a quarter million radios in the last three to four years."

In reviewing the history of SINCGARS, Bowden said an early, head-to-head competition between two manufacturers placed the

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More than 6,000 PRC-148 handheld radios have already been fielded to theater in Afghanistan, Goon said.

Over-the-horizon radio systems such as the Tactical Satellite (TACSAT) are used to relay communications through the mountainous terrains of Afghanistan, Goon said. Handheld radios are fielded for squads and platoons to use during patrols.

The Enhanced Position Location and Reporting System, which has many uses in theater in Iraq, is expected to be fielded to Afghanistan in the future. "EPLRS is a great example of the same radio, used by the various services in dif-

ferent ways, for different applications," said COL Cris Boyd, project manager for Command Posts, to which PD TRCS is assigned.

On the ground, for instance, the Army and the United States Marine Corps, use EPLRS to provide position location information, independent and complementary of the Global Positioning System (GPS). They also use it to haul voice and data traffic between wheeled and tracked platforms, he said.

"In Land Warrior, we use EPLRS to connect Soldiers to each other, as well as the larger platform-based network," he said.

The United States Air Force (USAF) uses

EPLRS to share data between fighter jets, such as fuel and weapons situations, targeting data, and information related to the aircraft itself.

"When supporting Army or USMC units on the ground, the USAF radios switch their EPLRS into the ground mode, and they can 'see' EPLRS-equipped friendly forces on the ground, as well as collect the common operational picture (COP) of both friendly and adversary locations and types," Boyd said.

A COP refers to the ability of separate commanders to share intelligence and data and

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# Cell develops rounded logisticians

By Scott Marcle and Julie Carter  
*Logistics Correspondents*

Many Army civilians have assumed positions traditionally assigned to military personnel and have also deployed in large numbers.

They comprise much of the Army's sustaining base and perform complex functions in critical fields such as logistics. As such, Army civilian logisticians are a critical component of the Army logistics transformation.

The Integration Cell within the Logistics Operations Cell, Logistics and Readiness Center, CECOM LCMC, is an element that is developing Army civilians to meet the heavy demands of modern Army logistics.

When Army units return from overseas operation, CECOM Integration teams must work swiftly to support the restoration of battle-worn equipment to a desired level of combat capability.

The Integration Cell was activated in November 2007 under the leadership of Scott Marcle.

Starting with one logistics management specialist, the cell evolved over two years to answer the ever increasing demands of Retrograde, RESET and Left Behind Equipment integration.

Today the cell is comprised of four Logistics Management Specialists; four regional integrated logistics specialist (ILS) managers each aligned with the 404th, 405th, 406th and 407th Army Field Support Brigades respectively, and a separate contract element to support Force XXI Battle Command Brigade and Below (FBCB2) and Blue Force Tracker (BFT) RESET requirements.

The logistics management specialist or LMS is the nucleus of the Integration Cell. However, an LMS in the integration cell is unique in that they must know vastly more than the average logistics specialist.

For starters, the integration LMS must have a thorough under-

standing of both field and sustainment logistics requirements and planning processes, as they work closely with the individual unit, Army Materiel Command, Army Sustainment Command, the other Life Cycle Management Commands and supporting Depots.

The LMS must also understand how to identify contract requirements, develop a scope of work and follow acquisition guidelines to ensure new or existing contracts are in place when needed. Likewise, the LMS must understand the basic tenets of maintenance, as all integration missions are maintenance transactions.

The LMS in the Integration Cell must also be particularly budget savvy, as they not only develop the funding requirements for a particular mission, they must closely track their expenditures and know what to do when additional funding is required. Last but not least, the LMS must be able to administer and communicate a variety of official forms, spreadsheets, briefings, after

action reports and so forth, as the "devil is in the details" and the paper trail can be very large and tedious depending on the mission.

Training an LMS in the Integration Cell was at first challenging, as there was nothing documented at the time.

Through a combination of Hands-On/On-The-Job training, logistics courses, and trial and error, standardization of processes and procedures eventually came to be.

Today the Integration Cell has documented Integrated Action Group processes and desk guides to assist any LMS, whether new or merely in need of information.

Key to training above all is making a solid connection to the real customers – the Warfighter.

The Integration LMS is a true "Logistics Multi-Tasker," juggling several efforts in various stages, all at one time. To date the Integration Cell has completed over 35 integration missions and is expected to complete another 37 missions this fiscal year.

## "Radios" From Previous Page

access it through a common view on a computer screen.

Using EPLRS, the Navy can guide landing craft from ships to shore, in all weather situations. This allows the ship to communicate with land base Tactical Operations Centers (TOCs) and share the operational picture which represents the situation on the shore, he said.

"All the services continue to experiment and improve operational use of sharing voice and data over the EPLRS radio system today," Boyd said.

The current force radios, which have been fielded since the first Gulf War, still satisfy users' requirements across the full spectrum of operations, Goon said. "I feel they will continue to meet the users' requirements until they are supplemented or replaced by JTRS," he said.

Joint tactical Radio System is planned to be the next-generation voice-and-data radio used in field operations by the U.S. military.

PD TRCS is constantly evalu-

ating enhancements offered by the radio manufacturers on the current force radios for increased robust waveforms such as Mobile Ad-hoc Networking waveforms, improved throughput and increased capability, Goon said.

Radios that might have borne the same name for years, have been updated incrementally to provide more capabilities to meet the challenges of today's digitized battlefield.

Separate radios are designed specifically for diverse missions.

"The types of radio equipment we provide can depend on the mission profile need in the area of operations," Goon said.

In most cases, units are provided with various radio types, so that they can choose those which will meet their needs, he said.

"The units are given a full spectrum of radios from two megahertz in the HF (high frequency) world, all the way to the gigahertz range from the satellite communi-

cations and TACSAT world," Goon said. "So, they have a variety of tools in the toolbox that they can choose from to fulfill their mission."

"How they choose to deploy or use the equipment is determined by the unit's signal officers," he said.

PRC-148 radios are used in Afghanistan for intra-squad communications such as those in patrols. Instead of hand signals, these type one encrypted radios — which utilize the SINCGARS waveform — allow foot patrolling Soldiers to communicate back to their vehicle, Goon said.

The Multifunctional Information Distribution System (MIDS) receives the air tracks of incoming missiles and sends them to F-18 fixed-wing aircraft and the MIM-104 Patriot surface-to-air missile system on the ground so that they can respond, Goon said.

The Combat Survivor Evader Locator (CSEL) is used for the search and rescue of downed pilots. "Operational details are sensitive,

but a downed pilot uses GPS embedded in CSEL to report their position via satellite," Boyd said. "When rescue aircraft are approaching the downed pilot, CSEL assists in geo-location and communications from the downed pilot to rescue aircraft with great accuracy."

A unit with additional needs can submit an operational needs statement, which is a means to report necessities for new or replacement equipment to the Army G3.

Once validated by the G3, the request is provided to the G8 for funding. PM Command Posts is then asked to provide the equipment to the unit.

PD TRCS is assigned to PM Command Posts of the Army's Program Executive Office for Command, Control and Communications-Tactical (PEO C3T).

"PM Command Posts' equipment spans from the TOC, to the lowest level of Soldier on the battlefield, carrying a radio for personal communications," Boyd said.



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program on solid footing in containing costs, as well as a cycle of perpetual enhancements.

In addition, cost savings were fed back into product improvement, Bowden said, but another critical factor in the program's success was maintaining a focused and disciplined approach to how SINCGARS evolved. He also credits a strong government/industry partnership and an outstanding staff.

"As we did each of the enhancements, we took it in manageable chunks," Bowden said. "Costs can get out of control, particularly if people are coming up with new ideas in the middle of it. So as long as you control those implementations over time, and you do it in manageable chunks, you keep program costs down."

How does one determine what is or isn't manageable?

"You have to tighten the appetite. That's really what it amounts to," Bowden said. "You have to make a decision on what the basic functionalities are, and it's not easy. You can't take a tank and expect it to swim. You have to keep things under control. And it's hard; it's really hard because commanders will see new products and say, 'Wow, if I have this I can do this, and I can do this other thing, too.'"

Bowden sees his role as someone who has to provide the bigger picture. When "appetites" seem to be growing, Bowden will say, "Well, yeah, but which one of those do you really need right now?"

"That's really what it boils down to," Bowden continued. "You really have to fixate on the basic functionality you want — and get that built. Once you have that built, then you can start adding all the bells and whistles."

Although Bowden on occasion may have to tamp down expectations, he generally isn't perceived as a technical spoilsport.

"You explain to them, 'Look, we could do that but it's going to take you twice as long and twice as much. We can get there, but if we do this first, you'll get this capability

***"Data is well and good for planning purposes, but when the fight starts commanders use voice. Commanders like to hear the stress in their troops' voices when they are talking to them, ..."***  
***-- James G. Bowden***



Photo by Michael Allison

now within the budget that we have.'

"I've also had very good support from senior management in the Army and in industry for all these years. When we've seen something that we felt we needed to improve the radio, I've always had that support behind me to make that happen. And we have significantly changed the capabilities of this radio over the years."

Since about 1989 when SINCGARS first entered production, the radio is much stronger, better and

much more capable, Bowden said. "There's no comparison between the capabilities of the radio today and then."

With several models of the radio within quick reach from a nearby shelf in his office, Bowden can methodically recite with precision and clarity the history and evolution of the radio. It's nuclear-hardened. It can withstand temperatures ranging from minus 51 to 70 degrees centigrade. It's widely used by the Air Force, Navy and Marine Corps.

Looking out into the future, the Army plan is to have 488,000 SINCGARS radios in its inventory by 2028.

"I have 38 years [of government service] in June, so I'm not going to be around in 2028," Bowden says.

"I would like to stick with the program until we finish the 2013 fielding. At least in my current job, I'll be here through 2011. After that I'll try to find some way to stay associated with the program, but probably not in the same capacity."

What advice would he give his successor?

Upon hearing the question, Bowden immediately erupts into multi-calorie-burning laughter, and manages to say "a lot of valium" as he continues to laugh.

"We've been trying to find someone and it's been hard," he said. "It's hard to find someone who has the experience to tie it all together. SINCGARS is a very complicated program. We touch a multitude of programs. It's one of the most critical technologies."

As a reprieve of sorts from the realm of acronyms and technospeak associated with military radios, Bowden turns to golf. Various golf-related items populate his office.

The game, he says, plays an important part in his life.

"Sanity," he says with a good-natured laugh. "Not that you'll get any sanity out of playing golf. That's the only exercise I get."

Despite the complexity of the SINCGARS program and all its potential extensions, Bowden said his overall experiences have been good.

"There's nothing like being a project leader," he said. "It's very rewarding."

"I don't know too many people who can say they put half a million radios into the field. In the time I've worked in SINCGARS, we've put that many out there. You know that you're saving lives of troops every day out there and that's rewarding."

"It's exciting. We're always coming up with something new."

# Rifleman radio to net every Soldier



Photo by Russ Meseroll

*Jeff Palumbo assists the test engineers to power up the radios.*

**By Erica Fineman-Bertoli**  
CERDEC Public Affairs & Outreach

Imagine you are trapped and an enemy combatant is closing in. You can see safety 100 yards away, but in order to get there, you need the assistance of your team. Yet you dare not call out for fear of being detected.

Now imagine you see your battle buddy in danger of being ambushed. If you call out to her, you risk revealing your position and endangering the entire team.

Imagine you are in a life and death situation, and though you have some of the most advanced technology our nation has to offer, you lack a reliable, secure means of communication.

What do you do?

Through a partnership between the Communications-Electronics, Research, Development and Engineering Center (CERDEC), the CECOM Life-Cycle Management Command (LCMC), the Program Manager Joint Tacti-

cal Radio System (JTRS) Ground Domain (JGD), and the Joint Program Executive Office (JPEO) JTRS, the Army research and development community is addressing this problem through the introduction of the Rifleman Radio - a networked, software-driven radio that will allow Soldiers on the ground to communicate with commanders and other members of their team.

This might not seem like a major advancement, but for Soldiers in the field who've been relying on hand motions to communicate vital information, the Rifleman Radio provides a means for secure communication that is not dependant on line of sight.

"To communicate with one another, a lot of Soldiers out there (the non-team leaders and the non-squad leaders) were buying off-the-shelf radios which are not secure," said Dinh Nguyen, a Software Engineering Center (SEC) employee matrixed to the JGD LCM Office, working in the field engineering group. "So that's how

this idea was conceived, so that every Soldier down to the lowest-ranked guy could have something that he could use to communicate to his other team leaders and squad leaders."

"If you have ever seen a movie like 'Blackhawk Down' or 'Saving Private Ryan' where the Soldiers are gesturing with their hands to communicate, that is still what American Soldiers do in the absence of a radio like the Rifleman Radio," said Michael Lebrun of Product Manager JTRS Handheld, Manpack and Small Form Fit (HMS).

Rifleman Radio leverages technology that was born through work done by CERDEC's Space and Terrestrial Communications Directorate (S&TCD) on the Soldier Level Integrated Communications Environment (SLICE) waveform. SLICE, which began more than a decade ago, was intended to provide a wireless communications environment for the dismounted Soldier.

Over subsequent years, the CERDEC matured this technology until SLICE became a part of the program of record for every JTRS radio, handheld and vehicle-mounted.

The SLICE waveform, under the JTRS PM Network Enterprise Domain (NED) purview, is being developed as the official Soldier Radio Waveform (SRW). SRW is the direct descendant of SLICE. Much of the same software that was originally developed by S&TCD for SLICE is still in use for SRW.

"The JTRS radios are what we call 'software-defined radios,'" said Jeff Palumbo- JTRS Ground Domain Field Engineering and User Support Lead. "So not only does it bring newer technology in terms of the networking capabilities, it is also extendible so that in a year or two, as new applications or modifications to the existing radio come out, they can be loaded onto the radio so that it has future growth capability built in."

"Virtually the whole functionality of that radio is now delivered through software, and this is something new," said Coleen Coughlin, Division Chief for Tactical Communications Division of the CERDEC Software Engineering Directorate (SED). "We are assuming here that all of the software components will work seamlessly together. It's like a computer: you have the operating system and applications. The operating system is like the operating environment; the radio services would be applications, and other applications would be waveforms."

What this means is that the functionality of the radio lies in the software rather than the radio itself. In this way, much like with cell phones and other handheld communication devices, upgrades, enhancements and patches can be sent out across a network without necessitating replacement of the radio should it become outmoded.

"If there are any updates or changes, you usually have to ship the radios back to a contractor or a depot like Tobyhanna, where you have to replace physical pieces of the radio," said Nguyen. "If a software-defined radio has any kind of update, you can send the software to the Soldier in the field, and he can update the radio without having to waste time sending it back."

However, the real success of Rifleman will be in how it helps the Soldier on the ground.

"The radio itself is a National Security Agency standard encrypted radio. So the transmissions are protected against an adversary who might want to listen in," said Lebrun. "This allows the Soldier to communicate by voice in a secure way that the adversary cannot intercept, and to use those voice communications to warn each other of threats or to coordinate movements."

In this way, the radio provides a significant force multiplier allowing for more rapid communi-



cation, more robust situational awareness and the ability to react in a more effective manner.

"The radio helps with force protection because now they have that digital voice and network capability that they didn't have before, so even when they can't see each other, they can still communicate," said Lebrun.

And because the radio is networked, there is no line-of-site requirement for communication among the team. This means that the Soldier can coordinate and communicate with any member of the networked team.

"Through the networking technology, it allows you to defeat the laws of physics. Now you can network around obstacles, things that would normally interfere with radio communication. Now as long as one radio can 'see' one other, the radios will network around and adapt to the environment," said Lebrun.

The Rifleman Radio was tested throughout the winter and spring.

"During our pre-LUT (Limited User Test) a couple of months ago, we tried to improve some of the processes we used with the Army Evaluation Task Force (AETF), which was our previous test of the Rifleman Radio," said Shawn Gennaria of the SED Data Distribution Systems Branch. "With AETF, we had all these clipboards and were collecting data to quantify metrics – things like the transmission rates and hop counts. During pre-LUT, we were able to streamline this data collection process by getting rid of the clipboards and using a custom

database application deployed on several ultra-mobile personal computers. This allowed us to gather individual radio data and merge it in a single repository with seamless database synchronization."

"Basically, the radios are evolving and changing. Our team works closely with the contractors to address and mitigate software risks and to resolve any issues," said Coughlin. "Our concerns are with the software: the radio services, the operating environment and the waveforms."

The Rifleman Radio project is a joint venture that leverages the specific expertise of the various labs within the C4ISR community.

"We draw a great deal of our technical expertise from the CERDEC staff, as well as from PEO C3T. CERDEC has the history and expertise with developing the SLICE 2.1 waveform, which is now called SRW," said Lebrun.

"Within CERDEC, there is the software technical expertise that you have from SED as to how to maintain and develop the user interface – anything dealing with software," said Nguyen.

However, it is the combined excellence of the C4ISR community that has made this advance possible. Within the working partnership, CERDEC's technical expertise has been joined with the Army Training and Doctrine Command, who represents the end user; JTRS holds the mission for developing and demonstrating the system; PEO C3T will be fielding and deploying



Photo by Russ Meseroll

*Dinh Nguyen of the Software Engineering Center sets up the plans for the day's test.*

the ground radios; and SEC and LRC, will oversee maintenance and support of the radios in the field.

"SEC and SED are the Army's center of expertise regarding C4ISR software sustainment. That's the value we will bring to sustainment of the JTRS radios. Because it's a software-defined radio, it's very easy to adapt our existing software processes and standards to support this radio," said Coughlin. "We support more than 200 systems with millions of lines of code. We have the infrastructure and expertise to sustain these radios in partnership with the JPEO."

"We are Joint developers," said Lebrun. "Why reinvent expertise when we can leverage all that CERDEC and the rest of the Army can bring to bear?"

Photo by Russ Meseroll



*Test engineers head into the Charles Wood Area to test the radios.*



# TEAM C4ISR PAST FORT MONMOUTH

## Long line of achievements build combat effectiveness

**By Melissa Ziobro**  
CECOM Historian

When the outbreak of World War I led Army officials to look for land for additional Signal Corps training camps, their search led them to the site of the former Monmouth Park Racetrack and luxury hotel. This track flourished during the latter half of the nineteenth century, when some of Monmouth County's wealthier habitués first brought horse racing to the area.

Amidst the turmoil of World War I, Lieutenant Colonel Carl F. Hartmann, the Signal Officer of the Eastern Department in New York City, tasked Major Charles H. Corlett to "go out and find an officer's training camp." Corlett recalled his initial discovery of the Monmouth Park land in a 1955 letter addressed to COL Sidney S. Davis, Chairman of the Fort Monmouth Traditions Committee. He reported that, after examining several other sites, he "finally stumbled onto the old Race Course near Eatontown. I found part of the old steel grandstand with eleven railroad sidings behind it, the old two mile straight away track and two oval race tracks, all badly overgrown with weeds and underbrush." Corlett continued to describe how he arranged a meeting with the owner of the land. "Upon inquiry, I learned that the land belonged to an old man who lived in Eatontown who was very ill (on his deathbed in fact), but when he learned my business, he was anxious to see me."

Corlett learned that the owner, Melvin Van Keuren, had offered to give the land to the Army free of charge during the Spanish-American War. Van Keuren regretfully informed Corlett that he could no longer afford to do so. He offered instead to sell the land for \$75,000.

*Soldiers line up for chow at Camp Alfred Vail in 1922.*

Corlett returned to his superior officers to report his findings. With the authorization of the adjutant general of the Army, Hartmann leased 468 acres of the tract from Van Keuren on May 16, 1917 with an option to buy. The site afforded the Army significant advantages: 600 feet of siding on a rail line to Hoboken (a Port of Embarkation), proximity to the passenger terminal in Little Silver, some good stone roads and access by water. The June 6, 1917 *Red Bank Register* reported that the land had been "farmed for the past four years by Charles Prothero. He will continue to work the farm south of the railroad tracks but all property north of the tracks has been leased by the government. On this property is a seventy acre field of potatoes. The government will recompense Mr. Prothero for this crop."

The first thirty-two Signal Soldiers soon arrived at Fort Monmouth, reportedly in two Model T Ford trucks. The installation was originally called Camp Little Silver, based merely on its location. General Orders dated June 17, 1917 named Hartmann the camp's first commander.

CPL Carl L. Whitehurst was among the first men to arrive. He later recalled that the site appeared to be a "jungle of weeds, poison ivy, briars, and underbrush." While he claimed that remnants of the old Monmouth Park Racetrack seemed to be everywhere, only one building remained habitable. He and his comrades awaited the delivery of tents in the track's former ticket booth.

Railroads soon brought the tents, as well as lumber with which to build barracks. Unfortunately, most of the lumber was green. According to Whitehurst, "By the time the wood was dried out it was winter. and in December there were



U.S. Army Photo

*Soldiers were first housed in tents when Camp Little Silver opened.*

cracks you could put your finger through. The winter of 1917-1918 was a tough one, and sometimes the snow would pile up on your blankets, coming through the gaps in the boards."

The Army renamed Camp Little Silver in September 1917 and changed the name to Camp Alfred Vail to honor the New Jersey inventor who helped Samuel Morse develop commercial telegraphy.

By the end of 1918, some Soldiers reportedly called it the "best equipped Signal Corps camp ever established anywhere." Just nineteen months after its acquisition by the Army, 129 semi-permanent structures had been built. The radio laboratories used forty-seven of these exclusively. Housing was available for 2,975 Soldiers and 188 officers.

Should those men fall ill, a hospital stood equipped to handle 40 patients. Two temporary stables could house up to 160 horses. Hard surfaced roads facilitated transportation. Soldiers converted one swamp into parade grounds, and another into four company streets lined by 200



tents.

The Chief Signal Officer authorized the purchase of Camp Vail in 1919 for \$115,300. The Signal Corps School relocated to Camp Vail from Fort Leavenworth, Kan. that same year. The Signal Corps Board followed in 1924. The installation received permanent status and the name Fort Monmouth in August 1925. The designation honored the Soldiers of the American Revolution who died in the Battle of Monmouth in June 1778.

During the inter war years, the Signal Corps Electrical Laboratory of Washington and the Signal Corps Research Laboratory of New York merged with the Radio Laboratories at Fort Monmouth in 1929 to form the consolidated Signal Corps Laboratories. The scientists and engineers of these labs developed, among many other things, the first U.S. aircraft detection radar.

With President Roosevelt's proclamation of a state of "limited emergency" on Sept. 8, 1939, following the outbreak of war in Europe, the Army was immediately authorized additional personnel. The Signal Corps School curriculum, both officer and enlisted courses, changed to accommodate the increased enrollment.

One year following the "limited emergency" proclamation, Congress passed the Selective Training and Service Act, providing for one year of compulsory military training and service. Roosevelt simultaneously called the National Guard into federal service, and the Army increased in size yet again.

With the passage of the Selective Service Act, the Chief Signal Officer ordered the establishment of a replacement training center at Fort Monmouth where enlisted personnel could receive their one year of training. The Signal Corps Replacement Center opened in January 1941 with capacity fixed at 5,000 men. By December, however, the capacity increased to 7,000, and the one-year training period shrank to thirteen weeks.

Fort Monmouth's other wartime training focused on officer candidates. The Officer Candidate Department was activated within the Signal Corps School on June 2, 1941. The first class commenced July 3, 1941. A total of 490 students chosen from warrant officers and enlisted Soldiers based on leadership, communications knowledge, and prior service comprised that class. A total of 335 newly commissioned second lieutenants graduated after three months' training. Subsequent classes averaged about 250 men, but the numbers gradually grew to 1,000 men per class.

Fort Monmouth received its first contingent of the Women's Army Auxiliary Corps (WAAC) personnel on April 30, 1943, shortly after Public Law 554 granted women the right to serve "with" (not "in") the Army -- The headline of the post newspaper that week read, "Vanguard of WAAC arrives to plan invasion of Fort."



U.S. Army Photo

*A group of Soldiers and civilians prepare to send a weather balloon aloft as part of a meteorological experiment circa 1927.*

The article began by exhorting men to straighten their ties, comb their hair, and "press those uniforms more carefully than ever because a new impetus has been added to Army life at Fort Monmouth." A Signal Corps board convened at Fort Monmouth in 1948 eventually contributed to the Army's decision to retain women in peacetime. The board deemed women "more adaptable and dexterous than men in the performance of certain specialties."

The Signal Corps leased numerous local sites during the war to facilitate Fort Monmouth's expanded missions, to include luxury beachfront hotels and Asbury Park's famed Convention Center (later made famous in part by local legend Bruce Springsteen, and now on both the state and national historic registries). Three field laboratories also sprang up during these years.

Fort Monmouth laboratory development during this period included the SCR-510 in 1941. This early FM backpack radio, a pioneer in frequency modulation circuits, provided front-line troops with reliable, static-free communications. Multichannel FM radio relay sets (such as the AN/TRC-1) were fielded in the European Theater of Operations as early as 1943.

FM radio relay and radar, both products of the labs at Fort Monmouth, are typically rated among the top pieces of equipment that made a difference in World War II.

Wartime training subsided quickly after the cessation of hostilities. Reductions began in May 1945 with orders to inactivate the Replacement Training Center. The center produced more than 60,000 Signal Corps specialists during the thirty months of its existence.

Most of the functions of the Enlisted Department of the Signal School transferred to Camp Crowder, Missouri, with the decline in requirements for trained replacements within the Signal Corps. Many expansion facilities leased or purchased during the war were abandoned.

Research in radar technology, however,



U.S. Army Photo

*A group of officers pose for a photograph in 1926.*

continued at the Evans Signal Laboratory after World War II. The site witnessed a milestone in scientific history on Jan. 10, 1946 when Signal Corps scientists, under the direction of LTC John J. DeWitt, successfully used a specially designed radar antenna (called the Diana Tower) to reflect electronic signals off the moon.

The Diana antenna focused a beam of high frequency energy, traveling at the speed of light, at the moon. Scientists achieved success shortly after moonrise when an audible ping came over the loudspeaker of their receiver, signaling the return of the radio wave just 2.5 seconds later. The Diana experiment proved the feasibility of communicating across vast distances of space, and newspaper reports at the time put the feat into the same category as the development of the atomic bomb.

As world tensions increased during the Cold War and the Berlin Airlift, the capacity of every activity on post again became necessary to sustain the Army's worldwide commitments. The introduction of Automatic Artillery and Mortar Locating Radars AN/TPQ-3 and AN/MPQ-10 proved to be a major success during the Korean War era.

Other developments of the period included a lightweight field television camera with a backpack transmitter; a pocket dosimeter for



Archive Photo

British MG Sir Charles Keightley presents the pigeon, G.I. Joe, the Dickens Medal for delivery of a message credited with saving 100 British Soldiers. Because of advancements in communications technology, the Army discontinued the pigeon service in 1957. A fixture on post since the end of World War I, Fort Monmouth sold many homing pigeons at auction, while "hero" pigeons retired to zoos.

detecting radiation; an ultrasonic quartz saw and super-small experimental field radios.

The Army disbanded the Technical Services (including the Signal Corps) and established the Electronics Command (ECOM) at Fort Monmouth in 1962. The Signal School would eventually move to Fort Gordon, Ga. over the coming years.

ECOM managed signal research, development, and logistics support, and supplied combat troops with a number of high technology commodities during the Vietnam War.

These included mortar locators, aerial reconnaissance equipment, sensors, air traffic control systems, night vision devices, and surveillance systems.

ECOM, for example, developed the AN/PPS-5 man-portable surveillance radar to replace the AN/PPS-4 and AN/TPS-33. The 95-pound set had a 360-degree scan capability. It could detect personnel within five kilometers and vehicles within 10.

ECOM awarded the production contract in April 1966, following evaluation of engineering development models in Southeast Asia. There were more than 350 sets in the theater by the end of 1970.

Though often deadlined for lack of repair parts, the set was popular with the troops because it reduced the need for hazardous surveillance patrols. According to one officer, "One AN/PPS-5 in operating condition is worth 500 men."

The high-technology commodities supported during the Vietnam War also included communications equipment. ECOM Commander, MG Frank W. Moorman (July 1963-October 1965) ordered the new, transistorized FM radios of the

AN/VRC-12/PRC-25 families shipped to Vietnam in July 1965 in response to GEN William C. Westmoreland's complaints about the AN/PRC-10. The new radios of the AN/VRC-12/PRC-25 series soon became the mainstay of tactical communications in Southeast Asia.

ECOM awarded competing production contracts to sustain the flow. ECOM's next commander, MG William B. Latta (October 1965-September 1969), personally browbeat contractors to ensure timely delivery of this product.

The PRC-25 was, according to Westmoreland's successor, GEN Creighton Abrams, "the single most important tactical item in Vietnam."

After several reorganizations on post, the new Communications-Electronics Command (CECOM) was stood up on May 1, 1981 and charged with research, development, engineering, acquisition, and materiel readiness of communications and electronics systems.

The personnel of this organization worked around the clock during the Persian Gulf War to equip Soldiers with and sustain everything from jammers and night vision equipment to surveillance and intelligence systems.

These systems gave U.S. forces unprecedented capabilities. For example, 24th Infantry Division (Mechanized) Commander MG Barry McCaffrey commented, "Our night vision technology provided us the most dramatic mismatch of the war."

A March 1991 Newsweek article described the Fort Monmouth-managed Firefinder radars' usefulness by stating, "When an Iraqi battery fired a round, a U.S. Army Q-37 radar would sight it and feed the battery's coordinates to computers



U.S. Army Photos

ABOVE: The U.S. Army Chaplain Center and School was located at Fort Monmouth from 1979-1995.

BELOW: The U.S. Military Academy Preparatory School came to Fort Monmouth in 1975.

that directed the American guns. It took less than a minute to drop a counter-round on the Iraqis. Many of them soon stopped firing. To pull the lanyard was to invite death."

Support for the troops continues today. The team headquartered at Fort Monmouth intensively manages over 128 major defense programs, amounting to over \$10 billion in total obligation authority to acquire, field, and provide new equipment training on C4ISR systems. In recent years the command has repaired, recapitalized, or replaced over 127,000 C4ISR systems. The CECOM LCMC team is responsible for almost 56,000 inventoried items—almost half the Army's inventory of end items and spare parts.

One such item proving critical in Overseas Contingency operations today is the Common Missile Warning System (CMWS), which detects incoming heat-seeking missiles and provides audible and visual warnings to pilots.

An Apache pilot recently wrote to the command, "I wanted you to know that your product saved my life today. I'm an Apache Longbow pilot deployed to Iraq and while on a mission today, I was fired upon. The on-board CMWS deployed and defeated the missile, saving myself and my copilot."



# Conference readies units for reset

By Julie Carter

Logistics Correspondent

It once was that units were responsible for planning their own reset actions. Information concerning new fielding and training schedules trickled in from various supporting agencies. The lack of a singular all encompassing conference created inefficiencies and delays that encumbered the Warfighter's ability to attain the readiness levels required for the next deployment.

That has changed thanks to Army Force Generation (ARFORGEN) synchronization conferences.

Today ARFORGEN has evolved from a static process to a "strategy to provide a continuous flow of Army trained and ready forces for full-spectrum operations.

It involves a structured progression that builds unit readiness over time, resulting in recurring periods of availability of trained, ready and cohesive modular units to meet both combatant command and Army requirements.

When a brigade-size unit starts preparation for redeployment, the CECOM LCMC Logistics and Readiness Center Logistics Operations Cell ARFORGEN Branch begins planning for that unit's ARFORGEN synchronization conference.

While the Army Force Generation Synchronization Conference is an Army Material Command, (AMC) sponsored event, CECOM LCMC is their designated executive agent, through which the Logistics Operations Cell's (LOC) Branch is the lead agency and executor.

The purpose of the synchronization conference is to enable the unit to synchronize their long range training with requirements for manning, equipping, resourcing, and training necessary to move them through the ARFORGEN process.

Realizing current Department of the Army standards require that a redeployed unit reset their equipment within 180 days of its return to home station, the conferences allow units to prepare for entry into the Train-Ready Pool.

An enormous task by any standard, the ARFORGEN branch has refined and matured this event into a carefully orchestrated two-day conference that brings multiple, complex and time-sensitive reset activities to the brigade combat team commander, and integrates and synchronizes the outputs to achieve unit readiness.

Originally developed out of the Program Executive Office for Command, Control, Communications-Tactical's Unit Set Fielding concept, the ARFORGEN synchronization conferences provide an engineering and planning event specifically designed for future fieldings to transformational units.

In March 2008, the CECOM LCMC's Lo-

gistics and Readiness Center (LRC) Logistics Operations Cell (LOC) streamlined PEO C3T's conference concept by incorporating the AMC Enterprise and the Assistant Secretary of the Army for Acquisition, Logistics and Technology community. AMC officially designated CECOM LCMC as the executive agent for all ARFORGEN synchronization conferences on Feb. 9.

The ARFORGEN Branch successfully executed 20 ARFORGEN Synchronization Conferences in 2008, and it has scheduled another 25 this year.

## Execution

ARFORGEN Synchronization conferences are typically conducted when a unit has been at home station approximately 45 days.

The planning and preparation starts long before this capstone event. Specifically, the responsible unit integration team (UIT) within the ARFORGEN Branch contacts the brigade combat team approximately mid-tour to tentatively schedule the conference based on the units' anticipated redeployment date.

Approximately 60 days prior to redeployment, the UIT engages the BCT's rear detachment and forward brigade staff to establish official dates and begin coordinating facilities and participants, analyzing the unit's organizational structure, modified table of organization & equipment and automated reset management tool and reviewing unit long range training calendars.

A fragmentary order (FRAGO) is drafted and distributed roughly six-to-eight weeks prior

to the conference, providing all participants with the standard mission and execution tasks, draft agenda, and annexes detailing unit organization charts and Modified Table of Organization and Equipment, briefing chart templates, teleconference schedule details, references and points of contact.

Shortly after FRAGO distribution, preconference teleconferences are set up with the unit and program manager to address the upcoming conference, answer questions and resolve issues.

Approximately three weeks prior to the conference, the UIT updates charts, collects briefings and finalizes the agenda.

Comprehensive information folders are also prepared for key leaders and participants that include the agenda, consolidated briefing slides, lists of acronyms and definitions; equipment and system list; contact list; maps and local information sheets; unit calendars; an evaluation survey, and a compact disk of all the briefings and charts.

At the conclusion of the conference, the unit's long range calendar is developed through the next mission readiness exercise.

Required Delivery Dates for reset systems are established, new fieldings are described and scheduled and required training on upgraded reset systems and new equipment training is scheduled. Additionally, collective, integrated system of system training is scheduled.

## Conference Agenda

### DAY 0

- ◆ UIT and PEO C3T Leads in-brief unit commander and staff on the goals, objectives and process for the conference. Discussion includes required delivery dates to meet initial CPXs, collective training events and MRX dates.

- ◆ Inspect and set up conference facilities

### DAY 1

- ◆ Opening remarks by key leaders; AFSB/AFSBn Commanders, Unit Commander, DA/G8, S3 and lead facilitator.

- ◆ Briefings presented by CECOM LCMC and associated PEOs/PMs, Battle Command Training Center

### DAY 2

- ◆ Recap of previous day issues.

- ◆ Briefings by AMCOM, TACOM, JMC, USAAMA

- ◆ S3 Out brief to Commander on the Long Range Training Calendar and Issues/Concerns

- ◆ UIT provides unit with a training matrix which is a consolidated listing of all dates negotiated during the conference and any issues/concerns which are tracked to resolution.

## Participating organizations include:

- ◆ BCT: commander, executive officer, S1, S2, S3, operations sergeant major, S4, S6, signal company commander, military intelligence company commander, and property book officer.

- ◆ LCMCs: CECOM LCMC and PEO C3T representatives, other associated PEOs and project managers, reset liaison officer (LNO), ARFORGEN LNO, CECOM LCMC LRC Reset Branch representative, integration representative, special repair team representatives and representatives from our sister LCMCs: Tank and Automotive Command (TACOM), Aviation and Missile Command (AMCOM) and Joint Munitions Command(JMC).

- ◆ Higher Headquarters/Installation: representatives from Army G8, Forces Command, Human Resource Command, U.S. Army Medical Materiel Agency, Army Materiel Command, Force Modernization and Battle Command Training Center; individual Army Field Support Brigade, army field support battalion, logistics support element, and brigade logistics support team.

# A close look at 'digitization's' dawn

By David G. Landmann  
CTSF Correspondent

FORT HOOD, Texas – As the sun rises on any given weekday, the cars of the more than 1,000 people whose names appear on the employee roster of the Whitfill Central Technical Support Facility (CTSF) begin to fill the marked slots in the three massive parking lots on three sides of the 24-building facility.

Before the sun has reached the 10 o'clock notch on the arc between dawn and noon, the lots are full.

But, it wasn't too long ago that the CTSF could boast only one small parking lot in front of the two trailers that housed its comparatively rudimentary test facilities.

Don Kirby, who now works in the CTSF's System Engineering and Integration branch, was one of the first four members of the facility's staff.

He arrived at the two-trailer complex in 1996 only months after the CTSF cranked up its first computer.

"We only had what are now Trailers 4 and 6," Kirby recalled, and our office was in the current (conference room)."

Kirby, like his CTSF contemporaries, was hired as an "independent tester" for the then test cell, that was not really entirely part of the CTSF.

"At that time, the test cell was an adjunct of EPG (the Army's Electronic Proving Ground). We were a forward enclave of EPG Northwest, headquartered in Fort Lewis (Washington)," Kirby said.

The CTSF was, as a matter of record, organized by the Program Executive Office, Command, Control, Communications-Tactical (PEO/C3-T) in 1996 to provide a center for the rapid development and testing of the Army Battle Command (now called LandWarNet Battle Command) System.

"We only had like seven systems back then, Maneuver Control System, Advanced Field Artillery Tactical Data System (AFATDS), All-Source Analysis System (ASAS), Combat Service Support Con-



Photo by David G. Landmann

*Test Operator Erica Britton tests an element of the Land Warrior software system during a recent interoperability event at the Fort Hood-based Central Technical Support Facility.*

trol System, Commanders Real-Time Tactical Display (CSS-CS), the predecessor of the Air and Missile Defense Workstation (AMDWS), and Force XXI Battle Command Brigade and Below (FBCB2)," Kirby recalled.

He added that, in fact, the CTSF test cell, "didn't have much FBCB2 around" at the time.

"We were just trying to get the TOC (tactical operations center) systems to talk to each other," he quipped.

By the end of 1997, the CTSF test cell roster had "swollen" to three "independent testers", and had hired on, in Kirby's memory, five to seven test operators.

"There was supposed to be one (operator) per system. As time went by, other (test operators) were provided by the PMs (project managers)," Kirby said.

The CTSF didn't actively start hiring and training test operators until 2000.

As the CTSF grew, so too, did the formalized process for its growth.

Len Krals, the CTSF's former



Photo by David Landmann

*This marker helps Soldiers find the CTSF at Fort Hood, Texas*

director of testing and evaluation, recalled that the process called for a task-organized, multi-disciplined, matrix-managed organization, at the center of which were Army Battle Command System project managers and their contractors. The CTSF's employee core was to be – and is – supplemented by several other contract organizations.

Both Kirby and Krals agreed that the early days of the CTSF were long busy ones, and although the specified mission was to assure interoperability between the systems that made up the ABCS, the unwritten mission involved attempting to figure out how to get things done.

"We were trying to build an

SOP," Kirby recalled.

Kirby said he and his co-workers found themselves starting at square one.

Now, the interoperability of Army software systems is tested on banks of computers that are interlinked in complex, carefully thought out architectures.

Test officers and operators use test cases derived from larger sets of commands called mission threads, to track messages sent and received

from one system to another. Test messages may be "split" along their path, and guided through the test architecture depending on the test case being used.

Where currently, the CTSF maintains three expansive test floors and volumes of state-of-the-art equipment, the facility that Kirby found himself in was substantially different.

"There wasn't a lot of room, and not a lot of equipment," he said, "and, at that point we had no test cases...and there were no (mission) threads yet."

"We had our few systems, and

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# Support team receives award for developing 'lifeline from the front'

By Josh Davidson  
PEO C3T, Chief Knowledge Office

Without a single point of reach back, a Warfighter could find the process of resolving a system-related issue to be rather lengthy, redundant and frustrating.

For its solution to this challenge, the Single Interface to the Field (SIF) team received a 2009 Project Management Excellence award from the Government Information Technology Executive Council (GITEC) in March.

The SIF portal has eased the process of incident reporting for Warfighters like Michael Tumminelli — who used it when he served as an operation's platoon sergeant throughout his deployment in Afghanistan from September 2007 to October 2008. Praising the SIF as his "lifeline from the front," Tumminelli used the portal to resolve each of his equipment issues and expediently locate experts.

"When we had issues with our (.50-caliber machine gun), personnel at Picatinny (Arsenal) would provide answers," he said. "We could find subject matter experts; and download images to help get our equipment up and running again."

Tumminelli described SIF as "a force multiplier," and "a great enhancement for the common Soldier."

"One time, (the subject matter experts) were able to accomplish a forensic investigation within 72 hours to help solve our problem," he said. "We literally relied on SIF every day during our deployment."

Tumminelli is the Communications-Electronics Research, Development and Engineering Center (CERDEC) operations and requirements manager for Army Team C4ISR's Counter-Improvised Explosive Device (C-IED) Team. He is presently a staff sergeant in the Army National Guard, where he serves as an infantry instructor.

The SIF is an entry point from which Warfighters obtain support of any system managed by the CECOM Life Cycle Management Command (LCMC) and additional digital capabilities. It not only guides them to the assistance they need; it links them to mission-essential information pertaining to areas such as fielding and training.

SIF is assigned to the Battle Command and Network Support Directorate (BCNSD) of the Army's Program Executive Office for Command, Control and Communications-Tactical (PEO C3T).

During his acceptance speech, John Wilder, deputy director for the BCNSD, indicated that project management has been key to the SIF's

success since it became operational on Jan. 16, 2007.

Wilder attributed SIF's success to numerous areas. SIF has filled an operational void for system users who formerly used multiple incident reporting tools to relay issues. The support community has also benefited from this single repository of information for separate project manager offices to share among one another and with their users, Wilder said.

"There is no question that the SIF team has made a tremendous contribution to the Army and to the Warfighter by creating a one-stop, continuously manned reach-back support capability for any issue with C4ISR products," Wilder said.

Building upon the support received from Army Team C4ISR's senior leadership, SIF now garners similar support among commands such as the Tank and Automotive Command (TACOM) and Army Sustainment Command (ASC).

"This is a major factor in overcoming the natural resistance to change and the reluctance for stovepiped processes to be synchronized into the larger framework," he said.

In this context, stovepiping means to focus efforts on one's singular process rather than the holistic one.

SIF's user-driven requirements are built incrementally by component. Functionality is added over time, through the process of spiral development. It is mandated by either operations or fragmentary orders. This has allowed each project management office within Army Team C4ISR to participate in the program.

The SIF team takes numerous steps to ease the use of its tools by the user base. Its "Go-to-Green" process, for instance, has allowed users to become familiar with and contribute to the SIF portal. Army-wide and unit synchronization conferences are used to educate the community on its benefits.

Education is accomplished on a more personal basis through the training resources SIF provides to the project manager and ASC communities. The project manager community uses regularly scheduled, instructor led Web-conference based training. In support of the ASC, the SIF team attends Combat Training Center, National Training Center and Joint Readiness Training Center training events to help "ease the integration of the use of the SIF tools into the day-to-day working processes of both the military and support communities," Wilder said.

Making constant reassessment a key objective, the SIF team follows a model of constant evaluation of the component tools and



*John Wilder, deputy director for the Battle Command and Network Support Directorate, received the 2009 Project Management Excellence Award on behalf of the Single Interface to the Field team in March.*

capabilities that coincide with its incremental development cycle. A user advisory group meets at least quarterly with working groups to share feedback and suggestions for product improvement, Wilder said.

The PEO C3T is providing a vast range of support for operations for Afghanistan in everything from equipping and training units in preparation for deployment; to around the clock reach back field support; and RESET of units upon redeployment, said Lt. Col. Michael Rodriguez, director, of the PEO C3T BCNSD. During this time frame, the PEO C3T embeds digital support engineers (DSE) in direct support of their assigned brigade combat team, who ultimately deploy with the unit into Afghanistan. Additionally, there is a lead DSE that is in the theater of operations that has oversight of all Army units in Afghanistan.

As in Iraq, these DSEs and field support representatives provide tiered support for all issues which arise with Army Team C4ISR systems. Both are assigned to the BCNSD's Support Operations Center (SOC), Fort Hood, Texas.

"Through use of the Single Interface to the Field Web portal and the 24/7 Army Team C4ISR Support Operations Center, PEO C3T is just a

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we had roles (simulated battlefield functions) for the systems, but no threads for testing. In those days everything (done to test a system) was done via a simple message and there was no data sharing," he said.

Early on, according to Kirby, trying to foster inter-TOC digital data sharing was something akin to "herding cats."

"You tweaked, you fixed, you cajoled....," he said with a faint smile.

But gradually, things started to change.

The first examples of what are now known as test cases appeared while CTSF worked with AFATDS.

"The first real test case was actually a thread, and it was built by Gene Twilleager," Kirby said.

Twilleager is now a branch chief in the CTSF Test Division.

The early efforts of testers like Kirby, Krals and Twilleager along with input from initial and evolved partnerships with CECOM, EPG, Army Test & Evaluation Command and Army Warfighters resulted in the current test process.

The process embraces an end-to-end approach in which testing is accomplished by pushing messages through a system of systems so the cause and effect of information flow can be observed.

Periodically, the CTSF implements a rigorous "test-fix-test" development process that

actually harkens back to the facility's early days. Test-fix-test cycles are methodical, measured efforts toward rapid software development in which configuration management is maintained by rapid delivery of new functionality facilitated in a shortened time frame.

Recently, the CTSF became the first accredited member, and the hub, or the Pentagon's new Federation of Net-Centric Sites (FaNS).

It is considered the hub of the FaNS system because of its successes in developing software interoperability testing procedures, and because of its ability to define the impact of the growing number of digital systems being made available to the Warfighter.

The CTSF, now under the command of COL Steven G. Drake has become a center where computer scientists, network engineers, software engineers, technicians, installers, computer operators, test officers, analysts, subject matter experts and program managers work together to assure the Warfighter that the software they are getting allows the systems they use on the battlefield to do what it is intended to do.

The roots of the current CTSF are firmly planted in the late 1990s and in the work done by the men and women whose cars were parked in that first small parking lot in front of the first two trailers.

"We were – almost all of us – old Soldiers, and not too long out of the field," Kirby said. "We



Photo by David G. Landmann

*Test Operator Susan Doran keeps cool in a Bradley Fighting Vehicle as she records data from an interoperability test.*

knew because of our field experience, what we had to do, and where it had to go." "It all ended up in the hands of the Soldier," he said.

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click or a call away from supporting the Soldier," Rodriguez said. "Additionally, through Department of the Army initiatives, PEO C3T is engaged in conducting field assessments in order to help the Army redefine actual user requirements as they evolve in the theater of operations to ensure the right solution set is provided to achieve mission success." SIF is presently used in garrison, exercises and in theater.

Prior to SIF, Army Battle Command System (ABCS) 6.4 users had 11 separate numbers to call for support, said Robert Wheeler, SIF's technical project lead. Warfighter feedback indicated that the PEO C3T was providing exceptional support, but improvement was needed for the processes and tools used for synchronization.

ABCS 6.4 is a suite of digital systems that provide separate capabilities that allow Warfighters to plan logistics, track one another's whereabouts on a topographical map using Global Positioning System technology, plan fires, access weather information, share intelligence, predict Improvised Explosive Device threats and manage the airspace.

Separate individual Field Service Representatives would use various tools, such as the telephone or Microsoft Excel spreadsheets, to report issues on a daily basis, Wheeler said.

"At the end of the day, a Commander had to put it together in one report — yet people were providing it in different fashions," he said.

The PEO C3T developed the SIF portal and SOC in response to this necessity.

In two years, SIF has been used to process more than 25,000 trouble tickets.

Engineers benefit from the incident reporting module's issue tracking and trend analysis capabilities. These Knowledge Management components of SIF are used to create articles about particular system issues, frequently asked questions and solutions for the benefit of individuals who experience similar challenges.

The SIF has also become a single point of information for processes such as fielding, Reset, Department of the Army reports and incident reporting. To put SIF's value to the deployed Warfighter into perspective, one might reflect on the support they receive from their car manufacturer. The typical car owner or mechanic will experience repair delays and frustration, when forced to search through numerous phone numbers or Web sites to report issues for separate parts of a car. Warfighters were previously placed in similar situations; being provided with separate elements for forward support, Wheeler said.

Since it became operational, SIF has

supported most of the rotations at the National Training Center in Fort Irwin, Calif., and the Joint Readiness Training Center, at Fort Polk, La., along with several home station exercises.

Stakeholders include the Army's Program Executive Offices, Life Cycle Management Commands and the Army Sustainment Command (ASC); while its customers include Warfighters, ASC Army Field Support Brigades (AFSBs), Department of the Army G3/5/7, and the Signal Center in Fort Gordon, Ga., along with the headquarters of ASC, AMC and the Assistant Secretary of the Army for Acquisition, Logistics and Technology.

GITEC is a council of Senior Level Government Executives who are organized in support of the delivery of high quality and cost-effective Information Technology (IT) services to their customers. The Project Management Excellence awards are for federal government projects that have achieved success in one or more of the areas of effective management of the changing budgetary and IT landscape; collaborative government/Web 2.0 vision; technology that is reshaping America; enhanced business results from innovation and cyber security/governance.

*Sandy Santiago contributed to this report.*



# Deputy director gets national award

By Brandon Pollachek  
IEW&S Correspondent

A 26-year Army employee was recognized as a Federal 100 award recipient during a ceremony on March 25, in Washington, D.C.

Michael Ryan, Product Director Signals Warfare deputy project director, was honored along with 99 other individuals in the federal information technology community, chosen by an independent panel of judges for their leadership, professional accomplishment, stature and peer acclaim.

Celebrating its 20th anniversary this year, The Federal 100 awards program was created to recognize key individuals in government and industry. The winners are nominated by **Federal Computer Week** readers and include honorees from a wide range of government including members of Congress, DoD, Department of Homeland Security, Industry and many other federal organizations.

This year's honorees, "have acted as agents for change in the way agencies and companies develop, acquire and manage technology, ... In many cases, the results of their efforts will be lasting." That quote comes from then-editor Edith Holmes from the first Federal 100 Awards issued in March 1990, and the words still apply today.

The recognition received by Ryan is directly related to his achievements in reducing the devastating effects of the single most effective weapon used against our deployed forces today -- improvised explosive devices (IEDs). By mid 2003, radio-controlled IEDs (RCIEDs) quickly become the signature weapon of choice in Iraq and Afghanistan and remain the number one killer of combat forces in the region.

First generation Counter RCIED Electronic Warfare (CREW) devices were fielded in response to this threat, but were limited in their capabilities.

Ryan came to PD Signals Warfare in late 2004 to take the program to the next level. When he arrived at the CREW office, there were only 12 people working on the program.

Today, there are over 60 government, military and contract personnel supporting the program office, an additional 200 support personnel in theater, and over 22,000 CREW "Duke" systems fielded in support of Operation Iraqi Freedom/Operation Enduring Freedom (OIF/OEF). Ryan briefly deployed to Iraq in May 2006 with the initial fielding of CREW Duke systems.

Casualties and deaths attributed to RCIEDs have been drastically reduced over the past five years, and the trend continues downward. Commenting on the award recognition, Ryan stated, "It is very satisfying to receive the feedback and look at the trends with RCIEDs over the last five



U.S. Army Photo

*Michael Ryan (center), deputy project director, Signals Warfare, who recently received recognition from **Federal Computer Week** on their Top Federal 100 list, discusses with Soldiers the initial deployment of CREW Duke systems during a deployment to Iraq in 2006.*

years. I'll accept this Federal 100 award, but know that there is an extremely talented and dedicated team behind all of this to make it really happen. We know that our efforts have effectively pushed the threat almost out of that spectrum, and made them (insurgents) rethink their methods for employing and triggering IEDs. They no longer have the upper hand."

Ryan's accomplishments have been evident throughout his entire career. Immediately after graduating college in 1983, he began work at Picatinny Arsenal, N.J. on fire control programs in support of small arms, combat maneuver, and air defense platforms.

Ryan came to Fort Monmouth in January 1991, at the onset of Desert Storm, where he supported the deployment of an electro-optic countermeasure program called Stingray for the Army. He also initiated a similar program for the Marine Corps scout High Mobility Multipurpose Wheeled Vehicles.

In 1996, Ryan moved up to Program Executive Office Intelligence Electronic Warfare & Sensors (PEO IEW&S) headquarters staff, where he held various positions there in Systems Engineering, Horizontal Technology Integration (HTI), and finally as the first Acquisition Logistics & Integrity (ALI) Team Lead.

Following his tenure on the PEO IEW&S staff, in 2003 Ryan accepted a new position as a Product Director under Project Manager Distributed Common Ground System-Army.

He then went to SW as the Product Director CREW from 2004-2006, and following that

assignment, Ryan took on a newly formed position as Director Counter IED Operations for Headquarters Communications-Electronics Research, Development, and Engineering Center (CERDEC).

In this capacity, Ryan assumed an oversight role for all of CERDEC for IED Defeat activities. He also is credited with establishing the C4ISR Spectrum Integration Working Group to address spectrum interference challenges between combat net radios and the CREW jammers across the PEO IEW&S and PEO Command Control and Communications-Tactical communities.

Their first success was achieved in less than seven months, with the initial fielding of 16,000 new Blue Force Tracker (BFT) systems incorporating the interference fix, or "I-Fix."

Today, all BFTs are able to operate properly without interference from CREW systems, allowing Soldiers to maintain vital situational awareness information of surrounding friendly forces.

In August 2007, Ryan attended Senior Service College at the National Defense University, Industrial College of the Armed Forces where he received a Masters in National Resource Strategy. Ryan returned to Fort Monmouth in June 2008 to become the Deputy Project Director for PD SW. In his current role, Ryan is heavily engaged in all aspects of SW business, to include high-profile Intelligence Surveillance Reconnaissance Surge related activities with the new Prophet Enhanced program, PM Information Warfare efforts, and critical upgrades required for the fielded Duke V2 systems.

# Streamlining logistics a tough task; payoff worth it for Soldiers overseas

By Ed Lopez  
CECOM Correspondent

In a "hot action" battlefield scenario, a weapons system designed to detect and destroy incoming missiles simply can't be inoperable for very long. Yet, if there is a chronic shortage of spare parts needed to maintain this and other key systems, the Warfighter faces higher risks.

As modern warfare grows in complexity and technological sophistication, having an adequate supply of spare parts on hand becomes even more critical. That goal is also balanced against the need to cut the costs of excessive inventories of spare parts.

How can such a balance be achieved? What tools can be applied to arrive at the right answer? And what standard, ongoing process can be used to resolve similar issues?

The spare parts problem, along with a wide range of other challenges and issues, often falls in the domain of the G3/5 function (Operations and Plans) at the CECOM Life Cycle Management Command at Fort Monmouth, N.J. In close collaboration with CECOM organizations, G3/5 tackles solutions for a broad spectrum of challenges.

"We provide structured analysis of processes with the intent to streamline the things that we do every day," said Raoul Cordeaux, director for Operations and Plans.

"The end result, if we're successful, is identifying where we can save time, material or money. The net result is that we are either able to apply more resources to the Warfighter or get things to the Warfighter faster."

The two main beneficiaries of the process are the Soldier and taxpayers, who get efficient use of their tax dollars, Cordeaux said.

While the behind-the-scenes work isn't glamorous, such initial and ongoing analysis is nonetheless fundamental to sustaining various aspects of modern warfare.

"We work with the mission organizations and they, introspectively take a look at their own processes, and select targeted processes for improvement," Cordeaux added. "Typically, they are the key processes that are part of their mission work."

Lean Six Sigma (LSS), the process-improvement method chosen by the Army to support Army Business Transformation, is a key part of streamlining processes and finding cost-savings. Using a team approach, LSS is designed to eliminate non-value steps and reduce process variations.

The process of wringing out more efficient operations can involve multiple components. In one situation, it was Muslim prayer times.

When it was taking too long for contractors working with U.S. forces in Iraq to enter the country, an LSS team examined procedures at an in-processing facility in Kuwait. Processing was taking from three to nine days. Bottlenecks were common. Passports and visas arrived all at once in a huge stack instead of a more even distribution throughout the day.

To determine the best times for additional delivery "runs," the LSS team considered shift changes at Kuwaiti immigration, bus times from Kuwait International Airport, and Muslim prayer times. With a new method developed with LSS tools, processing time was cut to 2.4 days.

Rosemary Deller, LSS Deployment Director for CECOM LCMC, said that a common misconception about Lean Six Sigma is that it's not inherently part of an employee's job or is somehow in addition to other duties.

"We try to stress that LSS projects reflect process issues already of concern to management—LSS provides a structured, documented approach to problem-solving," Deller said. "We're not asking them to step outside their lane. We feel that it's in everyone's job description



U.S. Army Photo

*Immigrations Specialist Thomas Sherrod counts passports in order to verify counts with Kuwaiti authorities at the Crisis Center at Abdullah Al Mubarak Air Base, Kuwait on Feb 11. Sherrod is part of the Army Materiel Command Reception, Staging, Onward Movement and Integration team.*

to be more effective and efficient."

LSS projects can vary in scope and complexity, which in turn reflects two levels of training involving "Green Belts" and "Black Belts." A Green Belt receives two weeks of training and works on projects that are smaller in scope and may involve internal issues within an office or organization.

A Black Belt receives four weeks of training over four months. Projects are wider in scope and complexity, may be cross-functional, and have financial benefits in excess of \$500,000. Deller emphasizes that organizations must be practical when deciding on possible LSS projects.

"We tell them, 'Don't try to come up with some oddball projects that aren't going to go anywhere and really don't mean anything to your mission. Think about something that's really an issue on the job, and let's take that, or something you're already working on, and see if it's LSS-friendly.'"

The LSS method uses a process-improvement road map with major categories such as Define,

Measure, Analyze, Improve and Control. For LSS results to be credible and withstand potential audits, an independent review by the G8 cost-analysis group is needed when establishing baseline costs in the "Define" step and validating financial benefits in the "Improve" stage.

Another area of Operations and Plans is the Systems Analysis Division, headed by Vincent M. DiNicola. Division personnel use mathematical techniques to analyze and solve a variety of operational issues. Those techniques include applied mathematics, modeling, simulation and queuing theory.

"We get involved in determining the best ways to maintain systems once they're fielded," DiNicola said. "It's a lot of coordination and communication because there are certain priorities that project managers are trying to achieve."

Acting as in-house consultants, Systems Analysis works with groups called Integrated Process Teams, which develop different support plans for various systems.

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## Spectra People Power Focus: Jeremy Mohr

# Mohr IT tech support makes BRAC true Bliss

By Delle C. Lambert  
USAISEC Correspondent

As the U.S. Army prepares for the latest round of Base Realignment and Closure (BRAC) movements, behind the moves, a force of military, civilians, and contractors work tirelessly to ensure the success of BRAC.

Within U.S. Army Information Systems Engineering Command - Fort Detrick Engineering Directorate (USAISEC-FDED) personnel address Information Technology (IT) issues, engage customers, review specifications and plans, and produce design packages. One such person supporting the BRAC effort is Jeremy Mohr, USAISEC IT Synchronization and Installation Information Infrastructure Modernization Program (I3MP) Lead for Fort Bliss.

Mohr initially started working for USAISEC as the I3MP lead for Fort Bliss and eventually became one of the founding members of "Team Bliss," which consists of USAISEC personnel who not only work on BRAC projects, but all USAISEC IT efforts at Fort Bliss. Their projects include I3MP, Military Construction Army, G3 Ranges, Land Mobile Radio, Secure Internet Protocol Router Network (SIPRNet), and Quality Assurance/Quality Control Directorate of Information Management support.

USAISEC Team Bliss partners closely with the Directorate of Information Management, Program Manager Network Service Center (PM NSC), U.S. Army Corps of Engineers, Fort Bliss Base Transformation Office, Fort Bliss Department of Public Works, Office of the Assistant



U.S. Army photo

*Jeremy Mohr (left) speaks with Greg Hoover, BRAC site project lead for Fort Bliss.*

Chief of Staff for Installation Management and the Warfighters. Mohr has also worked closely with the USAISEC-FDED BRAC office lead, Greg Hoover, for over three years, ensuring Fort Bliss can support the 1st Armored Division and other returning units.

Mohr credits his past experience to serving as a non-commissioned officer in the Signal Corps and his time deployed, which helped him to understand the perspective of the "user." Understanding how warriors utilize the IT infrastructure and equipment in both a strategic and tactical environment prepared Mohr to better support the Warfighter. "I understand first hand how important

effective and reliable communications are in Garrison and on the battlefield and try to pass that knowledge on to those who may not have had those types of experiences," Mohr said.

Overall, Mohr spent nine years in the Army on active duty and the National Guard. After he was discharged from military service, he worked in industry. Once the IT bubble burst, Mohr returned to government service as a civilian and has supported USAISEC for seven years on the I3MP.

The challenges with BRAC started early on, according to Mohr, and mainly consisted of processes, procedures, roles, and responsibilities. After the team concept was established, the challenges changed to scheduling shifts, priority changes, design changes, resource constraints, and schedule creep. "Greg Hoover (the BRAC Special Projects Lead for Fort Bliss) and I work very closely together and lead a team of highly trained IT professionals. We leverage the years of expertise that are represented on the team to help solve problems."

In turn, the USAISEC-FDED and PM-NSC praise Mohr and his efforts. The (IPT) leader from PM-NSC credits Mohr with keeping PM-NSC "on top of the action." Mohr was awarded the Defense Communications Systems - CONUS (DCS-C) Quarterly Superior Team Member award last year. Carl Hall, Mohr's Team Leader, states that Mohr has worked well with all the stakeholders and has kept the complex synchronization running smoothly. Mohr continues to provide his excellent support to the Fort Bliss effort.

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"They ask us to analyze them and determine which one would be the best value for the Army. Then we use computer models to analyze those different alternatives and evaluate them on cost and logistics performance.

"After the analytical phase, then comes the implementation phase," DiNicola said. "We determine what they should measure out in the field to determine how well the system is being supported, by either the contractor or Tobyhanna Army Depot."

While cost is one consideration, the method ultimately selected to support a system will reflect the priorities established by

a product manager. Those priorities could include technical capability, repair time, stability of the organization and responsiveness to repair.

"One of the jobs that we always get asked to do is to determine the amounts of spares needed to support a system, given the failure of parts of that system, and to determine what spares we should get that would keep costs at a minimum while still achieving a certain level of performance," DiNicola said.

"We just recently finished development of a model that was able to avoid \$52 million of unnecessary spares," he said.

That project was headed by Devon Morrese and used Lean Six

Sigma principles. A previous model for determining sparing levels assumed only one configuration for a weapon system. Yet systems with multiple configurations are becoming more common as the Army transforms into a modular force. A new algorithm was developed for more accurate sparing level recommendations.

DiNicola underscores the importance of factoring in the time and effort needed to perform a sound analysis of a problem or process.

"No one should try to use gut feel to make a decision," he added. "As obvious as a decision might be, it's not always the correct decision if you don't analyze it properly. These

kinds of analyses require some time, but they pay off."

DiNicola emphasizes the need for detailed information. "It can get so methodical and so exacting that some people get a little bit turned off by the amount of detail that you have to get in order to do the job."

The analysis chief's experience, however, is that support for the analytical process is often embraced at higher levels of command.

"They're always asked to defend their positions, and they're more than happy to have analysis that shows the position they are taking is the correct one and wasn't made on a gut-feel basis."



# Warfighter Information Network-Tactical: 'It's

... real,

... here,

... works'

Photo by Josh Davidson

*A Stryker vehicle travels through the location of the Warfighter Information Network-Tactical (WIN-T) Limited Users Test held in March at Fort Lewis, Wash.*

**By Josh Davidson**  
PEO C3T Chief Knowledge Office

Throughout the Army's history, communications systems, such as radios and the Warfighter Information Network-Tactical (WIN-T) Increment One, have shaped the tactical Army's ability to move and support combat forces, MG Nick Justice said.

"Communications have allowed the speed of maneuver to increase," he said. "It has allowed us to support the forces from further distances and it has allowed fires to be coordinated from afar. So, with those three elements; basically, you've made distance less of a limiter; you've made speed an enabler and you have allowed sustainment to be global."

Now, WIN-T Increment Two, will further enhance these capabilities. Throughout its testing phases, Warfighters experienced the on-the-move communications, increased bandwidth, and enhanced security of this future WIN-T increment. As Increment Two fields, it will allow Warfighters to communicate within their field of vision for the urban fights in places like Iraq or beyond the scope of their eyesight to the mountainous terrains like Afghanistan.

*"The WIN-T system, as we are developing it, is a quantum leap over how a commercial user obtains satellite communications."*

*--Rich Wexler*

"We're really excited about WIN-T Increment Two, because it allows us to put terrestrial

communications back in to that satellite network we fielded over the last few years and I need that redundancy and that fall back position to make sure that Soldiers have all the capability they need in a high intensity battlefield," said Justice, the Army's Program Executive Officer for Command, Control and Communications-Tactical (PEO C3T).

Today, WIN-T Increment One provides battalion-level and above Warfighters with the ability to connect to the Army's digitized systems, voice, data and video via satellite connections. Residing on this at-the-quick-halt communications pipe are the Battle Command systems which allow Warfighters to obtain real-time updates of their buddies' whereabouts over a topographical map, plan and execute fires, manage the airspace and share information such as intelligence, weather and terrain. Formerly known as the Joint Network Node-Network (JNN-Network), WIN-T Increment One officially became a program of record on June 5, 2008.

COL William C. Hoppe, project manager for WIN-T, noted the significance of WIN-T Increment Two being tested by Soldiers for the first time since its official inception in June 2007.

"It's real, it's here, and it works," he said. "It is the first set of the equipment that's coming off the line, so we still have work to do to get where we want to go, but it's here today. This is no longer Powerpoint."

The introduction of satellite communications on-the-move will enhance operational capabilities for units, Justice said. Like present Stryker brigades, other units will have networks which can function continuously on-the-move.

Not only will they communicate while traveling from one location to the next; they can also

plan the battle as they maneuver.

"It allows (Stryker brigades) to divert in the middle of a mission to another higher priority mission and plan on route," Justice said.

This will further align units with the Army Force Generation (ARFORGEN) model, which includes in route planning as a new capability requirement.

"You may not know what your mission is; so you have to be able to plan on route to your mission," Justice said. "It's about the speed of maneuver and being expeditionary."

CWO Kevin Gonzalez also looks forward to the on-the-move capabilities WIN-T will bring to Stryker brigades, with which he was worked for four years.

"Information and dissemination of it is the key for Warfighters," said Gonzalez, an Army brigade network manager. "Knowing where the enemy is; knowing where any friendly adjacent units are and being able to get real-time information or near real-time information down to the guy who is on the ground chasing down the enemy is what we're here for. I think that where we're using now with this increment (Increment One) and going further; I think that we're able to deliver that to the Warfighter."

Increment One provides one of the three legs of the Army's Global Network Enterprise Construct (GNEC). The Regional Hub Nodes (RHN) are part of the Increment One program and provide what the Army's Chief Information Officer, LTG Jeffrey Sorenson calls, "the connect". The Network Service Center is a component of the Army GNEC.

The Network Service Center construct will benefit units by providing a centralized server location for information shared across the network, said BG Jeffrey G. Smith Jr., commanding





Photo by Josh Davidson

*Soldiers prepare a Tactical Communications Node for use at the Warfighter Information Network-Tactical Limited Users Test held in March at Fort Lewis, Wash.*

general, of the Army's 5th Signal Command (Theater) in Germany. This will allow users to tailor information sets to a specific unit or organization.

As WIN-T connectivity is provided down to the company level starting with Increment Two, this construct will let users rapidly obtain information packets that are tailored precisely to their circumstances from any location. Suddenly, the company commander will receive information concerning his or her next objective and will possess the prodigious advantage of being able to participate in a broader common operating picture (COP), Smith said.

A COP refers to the ability of separate commanders to share intelligence and data and access it through a common view.

The communications on-the-move capability of WIN-T will prove critical as the enemy situation constantly evolves on the battlefield, Smith said.

"So, in the old days you had to stop what you were doing, set up a communications capability, receive the information and then determine whether you were going to modify your course of action," he said. "With WIN-T, you are able to immediately understand and apprehend the enemy's situation and evolve or modify your course of action; even as you are moving towards the objective. That's the great advantage in WIN-T and getting a tailored COP to a company commander who now oversees multiple individual platoon and team level missions; you can imagine the advantage. It's going to be huge," Smith said.

"The WIN-T system, as we are developing it, is a quantum leap over how a commercial user obtains satellite communications," said Rich Wexler, satellite communications lead engineer within MITRE Corporation's Fort Monmouth, N.J. office. "To date, virtually all (commercial) satellite communication has been fixed satellite communications service."

Typically, this means a fixed dish is mounted

on a roof or the side of a building for incoming or one-way communications that satellite television users receive.

Some satellite providers offer two way communications with Internet Protocol satellite and data communications capability.

"Our (Increment Two) systems provide full, duplex two-way communications and it provides it on-the-move," Wexler said. "So, we have taken two dramatic leaps over what is commercially available, because now we can provide communications anywhere in the world, on-the-move; both on improved roads and cross country terrain and we can do that at speeds well in excess of 25 miles per hour."

The story behind WIN-T Increment One began with the launches of 2001's Operation Enduring Freedom in Afghanistan and 2003's Operation Iraqi Freedom. The system was developed as an immediate response to the need for a beyond-line-of-sight communications pipe. The need for that type of capability surfaced when the now retired GEN William S. Wallace led the Army in a run for Baghdad.

Wallace recognized that the pace of the war outran the coalition forces' ability to communicate, which revealed a gaping hole in the way they fought. As the 3rd Infantry Division was deployed to Iraq, the need for an evolution of Mobile Subscriber Equipment (MSE) network, the 20-year-old existing line of sight satellite communications network, became evident.

"We've already changed the Army's communications (system) once in the last six years, when we moved off of MSE to Increment One,

or JNN," Hoppe said. "We're about to introduce that next step, that on-the-move capability, which is something that the Army's been after since the white paper came in after the original Five Corps run to Baghdad." Increment One is fielded to more than half of the Army.

The Increment Two Limited Users Test held in December at Fort Lewis, Wash. with 4th Stryker Brigade/2nd Infantry Division, marked the first time Increment Two equipment was formally placed in the hands of Soldiers.

"Certainly, each unit that is today deployed in Iraq and Afghanistan has WIN-T Increment One which introduces a broadband IP (Internet Protocol) network to support the needs of division, brigade and battalion command posts," Weiss said. "But it is limited to static at-the-halt operations.

So, with WIN-T Increment Two, this (was) the first time this system is really in the hands of Soldiers for a formal test. Increment Two brings that mobile network capability, which enables battle command and collaboration on-the-move."

In October 2008, an initial operational test and evaluation was held at Fort Lewis to demonstrate the operational effectiveness, suitability and survivability of Increment 1a to support a full rate production milestone decision. This was followed by an Increment 1b Limited User Test in March at Fort Stewart and Fort Gordon, Ga. in conjunction with the Increment Two Limited User

Test to ensure that new capabilities inserted into Increment One are operationally effective, suitable and survivable.

The WIN-T Increment 1b Operational Test is scheduled for May of 2010. During Increment Two testing, a "build-a-little, test-a-little" strategy is being implemented to identify developmental issues early on and address them before moving on to more extensive testing.

This method was used when PM WIN-T successfully executed a 15 Node Engineering Field Test for Increment Two at Fort Dix, N.J. and Lakehurst, N.J. in October 2007.

This was the largest High-band Network Radio demonstrated to date and showed the network's ability to perform dynamic routing on-the-move. This strategy continued during the 30 Node Engineering Field Test, held at Fort Huachuca, Ariz. in December 2008.

That event demonstrated a larger network over a significantly sizable geographical area. Future tests for Increment Two will include Product Qualification Tests this October and March of 2010, along with an Initial Operational Test in July of 2010. PM WIN-T is assigned to the PEO C3T.

*"We're about to introduce that next step, that on-the-move capability which is something that the Army's been after since the white paper came in after the original Five Corps run to Baghdad."*  
-- COL William C. Hoppe

# C4ISR DOMAIN

## Facilities, personnel converge on Army Enterprise concept

By Ed Lopez  
*CECOM Correspondent*

As times change, so must the Army.

The end of the Cold War and now a new set of global challenges have propelled the Army to transform itself both in structure and fundamentally in how it does business. These changes come against the backdrop of the third-longest war in our nation's history and the longest ever fought by an All-Volunteer Force.

"Looking ahead, we see an era of persistent conflict—protracted confrontation among state, non-state, and individual actors that are increasingly willing to use violence to achieve their political and ideological ends," wrote Secretary of the Army Pete Geren and Army Chief of Staff GEN George W. Casey, Jr., in their introduction to the 2009 Army Posture Statement.

The Posture Statement also describes the Army as "out of balance" after seven years of continuous combat, "straining our ability to maintain the All-Volunteer Force and maintain strategic depth."

In a speech to CECOM Life Cycle Management Command (LCMC) and Fort Monmouth personnel in November 2008, GEN Casey elaborated by saying "... we are being stretched to operate at a pace that we can't sustain either from the perspective of sustaining our Soldiers and families and civilians, or from rebuilding the strategic flexibility to do other things."

Future Army operations in the shifting global environment are expected to span the spectrum of conflict, from peacekeeping to counterinsurgency to major combat.

A key element in preparing for the future is continuous improvement of the Army Force Generation (ARFORGEN) process, which generates

trained, ready and cohesive units that can rotate to meet current and future demands.

Aside from generating manpower, the Army also seeks to streamline the process of providing Soldiers with effective and timely equipment through integrated research and development, acquisition and logistical sustainment.

An important part of the Army's modernization includes the adoption of an "enterprise" approach, with enterprise defined as "a cohesive organization whose structure, governance systems and culture support a common purpose."

One of the core enterprises in the Army transformation is the Materiel Enterprise. Key partners in this enterprise are the Army Materiel Command (AMC) and its major subordinate commands including the CECOM LCMC; the Assistant Secretary of the Army for Acquisition, Logistics, and Technology ASA (ALT) and Army Program Executive Offices (PEOs), including the PEOs for Command, Control and Communications-Tactical (C3T); for Intelligence, Electronic Warfare and Sensors; and for Enterprise Information Systems.

The Materiel Enterprise will focus on the imperatives that will rebalance the Army: Sustain, Prepare, Reset, and Transform.

AMC Commander GEN Anne E. Dunwoody said in an interview with Military Logistics Forum that an aging infrastructure is diminishing the resilience and flexibility of our industrial base. "Despite these unprecedented challenges," the general added, "the way forward is clear; the surest path to the necessary transformation of the Army is the adoption of a comprehensive enterprise approach."

A key linchpin of the Enterprise approach is to adapt the Army culture, organizations and processes so that leaders take a holistic approach to

run the Army more effectively. That means more collaboration, increased speed, better planning, greater transparency, eliminating duplicate efforts and fostering a culture that provides incentives for good stewardship.

Army planners stress that the Enterprise approach is not a re-allocation drill or a creation of more layers of bureaucracy that would hobble decision-making.

Because it's common for personnel to think in terms of their own individual organizations or "stovepipes," adopting a holistic view may take some time.

"Culture change is always difficult," said COL Anne L. Davis, the AMC Materiel Enterprise Task Force Director. "People tend to look at things from an organizational perspective. What they need to do is think in the context of what is best for the Army and not necessarily what's best for the organization."

COL Davis emphasized that heightened coordination and communication are needed to truly transform the Army. "In the Materiel Enterprise the goal is to synchronize our actions with other core enterprises so that we don't re-create four new stovepipes."

The need to adopt an Enterprise approach is compelling when the scale and scope of AMC is placed in perspective. The command has more than 61,000 employees, a \$47 billion budget and \$104 billion in contract obligations. By including the ASA (ALT), which has a \$34 billion budget, the Materiel Enterprise would have a combined budget of \$81.5 billion. That would place the Materiel Enterprise close to number 22 on the Fortune 100 list of the largest corporations.

Within Army Team Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR), Unit Set



The following "mission domains" will be an integral part of the new Center of Excellence at Aberdeen Proving Ground, Md.

- ◆ HQ Business and Enterprise Support
- ◆ Business Enterprise Systems
- ◆ Future Combat Systems
- ◆ Power and Cooling
- ◆ Fabrication
- ◆ Sensors Manned and Unmanned
- ◆ Multi-Int
- ◆ Ground Based Radars
- ◆ Night Vision
- ◆ Force Protection and Survivability
- ◆ Navigation
- ◆ Comm Sys-Network Transport
- ◆ Command and Control Systems

Fielding (USF) has been instrumental in providing enterprise-focused support to the force.

Initiated in FY 2005 by the PEO for C3T, this "system of systems" method for fielding C4ISR equipment has grown to include all phases of support and now heavily involves the CECOM LCMC Logistics and Readiness Center (LRC).

Today, USF has been lauded around the Army as the principal means of accurately synchronizing, equipping, and sustaining support within all phases of ARFORGEN.

To provide a framework to shape the Materiel Enterprise, a three-tiered approach to collaboration has been put into place:

- ◆ An Executive Forum to oversee the entire Materiel Enterprise
- ◆ An Operating Forum that ensures integration across the Enterprise
- ◆ Execution Forums that encourage functional and multi-functional coordination with Lifecycle Management Commands, PEOs and Program Managers, ASA (ALT) Deputies and other AMC major subordinate commands.

This structure also facilitates recommendations to the Army Enterprise Board in order to operate more effectively and efficiently within the Enterprise. This type of information flow is considered critical for transformation.

"Communication is the key," said COL Davis. "It's getting the right people involved in decision-making early on. It's not trying to change who has the authority, but we want the right people at the table so they can be heard."

"The Materiel Enterprise has made great strides after six to eight months. It's going to take time. The goal is to adapt the Enterprise approach by 2011 to the entire Army. But everybody's working toward that now."

# Future center fits future and current challenges

By Ed Lopez  
CECOM Correspondent

In describing the Army's future direction, COL Scot MacKenzie evokes an image of a mechanic who would like to be in the same room with engineers when they're designing a car.

"Why do they have to put that oil filter all the way back there?" MacKenzie imagines the mechanic saying. The colonel reflects on how the mechanic can make quicker repairs if he has a chance to speak to engineers when the car design is still on the drawing boards.

Using that example, MacKenzie pivots to discuss how early collaboration and open communications can be applied in a military context.

When a system is in the early stages in research and development—and the initial design is coming together—early feedback from various participants can yield efficiencies in cost and time.

"Someone may say, 'Hey, you may want to go this route because long term that will be easier and cheaper to sustain.' Does he tell them they have to do that? No, but he offers his perspective."

Closer and earlier collaboration bears fruit in many areas beyond sustainment and builds upon the various processes and efforts that already exist.

"We're doing a lot of good things now," MacKenzie said. "We're getting a lot of the players together earlier in the development cycle."

MacKenzie, former Director of the Command Initiatives Group for the CECOM Life Cycle Management Command, said an Army culture of improved teamwork will be fundamental to achieving the most sweeping changes in the Army since the early years of World War II.

The drive for greater collaboration and communication among disparate components is not only an Army-wide imperative, but it is also the underpinning for the new Center of Excellence under construction at Aberdeen Proving Ground (APG), Md.

According to the Army Campaign Plan, a Center of Excellence is "a premier organization that creates the highest standards of achievement in an assigned sphere of expertise by generating synergy through effective and efficient combination and integration of functions while reinforcing unique requirements and capabilities."

The Center of Excellence at Aberdeen will be the new home to Army Team C4ISR (Command, Control Communications, Computers, Intelligence, Surveillance and Reconnaissance).

Army Team C4ISR manages a total of 104 major defense programs amounting to more than



*The conceptual framework for the Center of Excellence has as its foundation the values of an Enterprise. Thirteen functional mission domains serve as the center's "core" and are unified by cross-functional areas such as acquisition and sustainment. Boards or "forums" provide governance and guidance. The uppermost element is the customer of the Center of Excellence: the Joint Warfighter.*

\$32 billion in total obligation authority to acquire, field, sustain and provide new equipment training on C4ISR systems. It is also responsible for almost 56,000 inventoried items — half the Army's inventory — including more than 6,000 major end items.

Because various organizations are responsible for different aspects of the entire life cycle of a system — from concept to combat — a culture of close-knit collaboration not only provides timely support to the Warfighter but uses taxpayer dollars as efficiently as possible.

"We're hoping that at the technical level and the program level that we will make smarter choices even though different people have responsibilities to execute separate portions of the life cycle," MacKenzie said.

A confluence of events has given impetus to the Army's push to transform itself to handle current and future demands:

- ◆ Army leaders describe the Army as "out of balance" after seven years of continuous combat that represents the third-longest war in the nation's history and the longest ever fought by an All-Volunteer Force.

- ◆ The global security environment is more ambiguous and the next several decades

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are likely to be characterized by persistent conflict, from peacekeeping to counterinsurgency to major combat.

◆ The current state of the nation's economy is ushering in an atmosphere of heightened scrutiny of how federal resources are used and prioritized.

MacKenzie said cost-consciousness is part of the "stewardship" principle of the "Enterprise" approach that the Army is adopting as part of its transformation.

"It's absolutely necessary that we become better stewards," he said. "That's not to say that we haven't been good stewards. We just need to be better, the Army is saying, and I think it's prudent for us to do that."

A key catalyst for Army Team C4ISR to be rooted in a Center of Excellence is the 2011 closure of Fort Monmouth and the relocation of C4ISR organizations as part of the implementation of the 2005 Base Realignment and Closure (BRAC) law.

With the bulk of C4ISR operations to be transferred to a compact campus at Aberdeen—compared to a sprawling, scattered assemblage of buildings at Fort Monmouth—Army Team C4ISR leaders see an opportunity to leverage that proximity of personnel as one of the foundations for a new Center of Excellence.

"Early on, it was recognized that the move down to Aberdeen was an opportunity to take a look at how the command does business and see if there aren't some better ways to organize ourselves as a result of the move to gain some advantages and some synergies," said Michael Vetter, CECOM Life Cycle Management Command, director (G4), Logistics and Engineering.

Along with a new, \$800 million campus, the proposed Center of Excellence will have at its core 13 unique but interrelated "mission domains" that are expected to facilitate heightened communication, collaboration, transparency and synergy across the C4ISR community.

Each of the mission domains provides traditional program-management functions as well as R&D technology development and sustainment functions. The composition of each domain will vary, based on requirements of the program managers.

The domains include areas such as command and control systems, navigation, force protection and survivability, night vision and fabrication. (see sidebar, previous page.)

The foundation for these mission domains are the Army Enterprise principles of communications, collaboration, transparency, stewardship and trust.

As a way to provide guidance and focus for the various domains, a three-tiered operations and governance model will serve as the capstone

for the Center of Excellence concept. This model includes Technical, Program and Leadership Executive boards, also referred to as forums, which are intended to provide the structure for collaboration across the full life-cycle of C4ISR activities.

The combination of mission domains, an Army Enterprise focus, proximity of C4ISR personnel at Aberdeen and new employees with fresh perspectives will be the elements that will forge the Center of Excellence.

"These are the parts we hope are all meshing together," said MacKenzie. "They're all major dynamics."

Supporting the Warfighter efficiently and effectively is ultimately at the center of the Army's push to transform itself and foster an Enterprise approach, which manifests itself in a Center of Excellence.

"You can deliver the best equipment, but if you deliver it at the wrong time you're not maximizing its potential," MacKenzie said. "And if units miss the training on the equipment, they'll have to figure it out in theater."

The current and future demands on the Army to prepare for and execute a full spectrum of operations over the coming decades serve as a stimulus for a quickened pace of transformation.

"Post 9/11, the operations-tempo has been unbelievable in the Army," MacKenzie said. "The funding has been there to enable all that op-tempo."

But now we are entering a period where we see restrained resources coming. Is the op-tempo



*Five independent yet strategic dynamic elements are expected to mesh in the new Center of Excellence: Physical proximity of personnel to enhance collaboration; new personnel with fresh perspectives; an Enterprise environment arising from an era of efficiency; mission domains based on functional areas; and a three-tiered governance structure.*

going to slow down? It will be reduced some, but it will be steady.

"This is an era of heightened efficiency. So we have to collaborate a little better to do what we do better and more effectively."

## Transforming culture a vital yet herculean task

**By Ed Lopez**  
*CECOM Correspondent*

As the Army moves forward to become more adaptable and flexible, the 2009 Army Posture Statement outlines some of the key requirements to achieve 21st Century capabilities required to win decisively.

"Institutional Adaptation is an essential component of the Army's overall transformation effort and will improve Army management by facilitating changes to Army culture, functional alignment, governance forums and processes," the statement reads.

Part of the culture change involves taking a long-term view of what's best for the Army overall. "We don't necessarily reward people for making a decision that might benefit the Army 10 years down the road," said COL Scot MacKenzie, former Director of the Command Initiatives Group at the CECOM Life Cycle Management Command. "We reward them for doing something right now."

"The culture of the Army is 'make it happen.

Complete your mission.'

We have a lot of great people. No one is trying to not be enterprise-minded, but they are sometimes rewarded for near-term effectiveness. "It's a challenge we can overcome but it's not going to come with one or two changes," MacKenzie added.

"It needs to be a comprehensive change. If you want to grow enterprise-minded leaders, you must educate them about being more holistic and thinking about the needs of the Army."

As part of the transformation, MacKenzie said it's necessary to "grow" people into adopting Enterprise values from the time they enter the Army.

Encouraging and rewarding personnel for embracing new ways of thinking is also important.

"You start with each individual person and over time when you make these things standard operating procedure, cultures can change," MacKenzie said. Yet he also recognizes that the process will take time.

"We didn't get to where we are overnight."



# Sparks fly at Huachuca tech center

## Technology Integration Lab renovation underway

By Delle C. Lambert  
USAISEC Correspondent

FORT HUACHUCA, Ariz. — Thirteen years after moving into its current building, the Technology Integration Center (TIC) needed to reorganize its labs into one centralized lab area for testing across the U.S. Army Information Systems Engineering Command. There was a drastic change in network devices, testing requirements, test equipment, and customer expectations since the TIC first opened.

In response to these events, TIC leadership decided it was time to reorganize the group of engineers who conduct network system and device evaluations. "Looking towards the future, the TIC needed to enhance our capabilities," said TIC Senior Engineer Arlie Barber. This reorganization includes three components: the business, physical, and organizational models.

Of these three components, the physical infrastructure upgrade is the most costly. It is also the key to success in the other two areas. The physical upgrade addresses four areas: testing efficiency, test personnel, environmental safety and cooling & power.

Historically, the TIC labs were each constructed to support an individual team or project. "After a few years, we figured out that

build those labs," said Bill Beech, TIC Network Optimization Subject Matter Expert. "This is our chance to do it right."

Over time, building individual labs led to inefficiencies and poor resource utilization. The TIC evaluated usage on one piece of test equipment valued at approximately \$500,000 and found that the equipment had only 14 percent utilization during 2007. In addition, 20 common LandWarNet services were replicated across three different labs in the TIC. It took 27 servers total to provide all of those services to the labs.

To address these inefficiencies, the TIC is consolidating its labs into a 2,500 square foot raised floor lab. This allows testers to share resources across projects, eliminating redundant equipment, and reducing yearly maintenance costs.

Consolidating the LandWarNet servers alone will save the TIC approximately \$60,000 in equipment and labor costs per year. They are also using virtualization on both servers and desktops to further consolidate equipment.

"I'm a huge supporter of virtualization," said Beech. "Virtualization is going to save the TIC money on equipment and also reduce our power and space requirements."

Another area the TIC is addressing is personnel safety and comfort for the engineers. When the TIC labs were initially established, testing personnel were located in the same rooms as devices under test. As the size and power of these devices

grew over the years, larger fans were required. These larger fans resulted in an increased noise level within the labs. While still within



U.S. Army Photo

*A welder affixes water pipes for a new environmental system during the ongoing lab renovation project at Fort Huachuca, Ariz., Dec. 16.*

industry safety standards, this loud environment became increasingly uncomfortable for the workforce. To address this, the new TIC lab is a "dark" lab. All equipment is completely isolated from the workforce and testing is done remotely from other rooms within the TIC. The only time workers enter the "dark" lab is to conduct initial setup and cabling or to troubleshoot a physical problem.

This dark lab concept also provides more efficient power and cooling to the TIC.

By isolating the equipment in one room, the TIC can now isolate that equipment's cooling needs from the centralized building heating, venting, and air conditioning (HVAC).

The TIC is also replacing two aging 30-ton HVAC units with two 40 ton units, with room for a third unit if needed in the future. These HVAC changes will significantly reduce the strain placed on the building's HVAC system.

This dark lab also allows the TIC to place the majority of its high amperage power circuits in one room, while at the same time upgrading circuits to handle the higher power requirements of today's network equipment.

Barber said, "They've done similar upgrades before, but on a much smaller scale."

"This is the first time we have ever addressed overhauling the entire TIC mission capabilities," said Barber.

***"They've done similar upgrades before, but on a much smaller scale. This is the first time we have ever addressed overhauling the entire TIC mission capabilities."***

***-- Arlie Barber***

we did not build our labs the right way. We built the labs to support the organizational structure, which wasn't the most efficient way to

# Tobyhanna puts forth vision for Depot Maintenance of the Future

By Jacqueline Boucher  
Tobyhanna Correspondent

Using cutting-edge technology, Tobyhanna visionaries have created a workspace that will showcase, test and demonstrate new methods and systems.

The Depot Maintenance of the Future (DMOF) facility is a 10,000 square foot, technological innovation designed to stimulate new ideas and influence advancement of work techniques. Featuring top-quality amenities, the facility will serve as a working laboratory for new technology and processes.

"DMOF is our vision for how Tobyhanna will look and operate in 2015 and beyond," said Col. Ron Alberto, depot commander. "It is a working laboratory to test new tools, processes, equipment and facilities—we will propagate what works across the depot and will scrap what does not fit into our system. The greatest part of DMOF is that it is designed as a flexible and agile workspace that we can rapidly reconfigure to new workload, processes or customers. I expect it to be a selling point to future customers for years."

The facility includes a flexible design, electronic technical data, the latest technologies and equipment, and electrostatic discharge (ESD) control. It is also visually attractive and environmentally friendly. DMOF's central location allows easy access to nearby work centers to view and evaluate the prototype equipment, processes and facility.

"The cutting edge design features elements that have never been seen here before and are demonstrated through the physical space as well as the virtual," said Thomas Sincavage, lead architect, adding that everything is going to be a very unique experience. "DMOF will encourage people to embrace the possibilities. We're taking the next steps forward, building on and improving things for our future."



Photo by Tony Medici

*Daniel King, electronics worker, performs functional tests in the Active Audio Language Lab. King is assigned to the Computer Service and Repair Branch, C3/Avionics Directorate.*

"It's a working display," said Thomas Sincavage, lead architect. "The cutting edge design features elements that have never been seen here before and are demonstrated through the physical space as well as the virtual," he said, adding that everything is going to be a very unique experience. "DMOF will encourage people to embrace the possibilities. We're taking the next steps forward, building on and improving things for our future."

Employees in two Command, Control and Computers (C3)/Avionics Directorate organizations will be the first to work in the DMOF. Workload in the Navigation Systems and the Computer Service and Repair branches was selected based on specific characteristics.

"We are moving the Tobyhanna Multimedia Language Lab (TMLL) and the Medical Communications for Combat Casualty Care (MC4) from the Computer Service and Repair Branch," said George Bellas, C3/Avionics director. "Both of these systems are high tech, new equipment consisting of state-of-the-art computers." Bellas noted that TMLL is deployed to countries to teach primarily English using per-

sonal computers and MC4 consists of a handheld computer system that allows medics in the field to access an injured Soldier's complete medical record.

"MC4 integrates, fields and supports a comprehensive medical information system enabling lifelong electronic medical records, streamlined medical logistics and enhanced situational awareness for Army tactical forces," Bellas said. Tobyhanna configures the systems for fielding, upgrades the hardware and software, and performs repair in the field through Forward Repair Activities.

"Using the DMOF to roll out and test new concepts, procedures and equipment will enhance our capabilities in and around the depot," said Jerry Dougher, C3 Division chief. The selection of the MC4 and language labs workload will show the rest of the depot workforce some of the capabilities that reside in parts of the depot that are not commonly on display."

The DMOF will provide an environment of continuous improvement that can help employees repair older components faster and more efficiently.

The Navigation Systems Branch showcases Tobyhanna's capability to design, build and use modern automated test equipment (ATE) such as the PXI (PCI eXtensions for Instrumentation) System and the Agilent 3070 Board Test System. Branch employees will overhaul AN/ASN-128 Doppler Global Positioning System (GPS) Navigation Systems, AN/ARN 149, 147, 123 and 89 receivers, and Miniaturized Airborne GPS Receivers (MAGR) in the new facility.

"Although these systems are older legacy systems, we are setting up new state-of-the-art test equipment in the DMOF repair process," Bellas said.

The branch chief noted that the new benches, climate control system and improved lighting all contribute to a better work environment. "The ESD controls being implemented meet the latest standards and will allow the shop to take in new workload with the latest technology that contains highly sensitive components," Anthony Gentle said.

The benefits of the new workspace are many, according to Bellas. From the natural lighting piped in from light tubes to the superior



air conditioning and exhaust system, the environment will provide outstanding working conditions, he remarked. "We expect additional benefits from the enhanced ESD equipment and procedures, paperless environment, the conveyor system, and the new test equipment and processes," he said.

Another main feature of the DMOF is its flexibility. As workload requirements change, the room can be converted to support any mission.

"Although the depot has embraced Lean concepts, the DMOF facility was designed using Lean principles from the start," said Joseph Wassell, Avionics Division chief. "The modular design of the work area promotes efficiency and allows for quick-reaction restructuring due to changes in workload," he said, adding that the DMOF concept will serve as a steppingstone to facility improvements throughout the depot.

"It will be a constant reminder of how flexible the depot needs to be in order to accommodate future systems and their specific requirements," Wassell said.

DMOF features modular moveable walls and doors. Glass partitions will provide privacy without confinement, and acoustic materials will ensure the area is quiet. The workspace also includes new ergonomic workstations with a variety of accessories that can be added to precisely suit the needs of different applications and users.

These workstations can increase a worker's productivity by providing easier access to test equipment on adjustable height shelving, access to technical data on monitors attached with adjustable swing arms and customized drawer storage providing shadow boxes for standard tools, according to Patty Curran, project leader. The conveyor systems, which are also modular and reconfigurable, will enhance efficiency by providing an improved material process flow, she added.

An overhead utility grid system will provide power, networking, compressed air, and even fume extraction, to the workstations that require those utilities. The grid provides an agile workspace, frees up floor space and enables quick reconfiguration.

Curran explained that unlike a raised floor system, which requires the relocation of furniture and equipment whenever utility changes are needed, the overhead utility grid enables reconfiguration of the area with very little disruption to other processes.

Increased productivity, healthier environment and lessening the depot's environmental footprint were taken into consideration when designing the DMOF facility.

"It's a space that's going to have movement in it," Sincavage said. "This is not the conventional design most people are used to seeing," he said, pointing out that this space introduces natural light and open space.

Lighting for this new area is intended to be environmentally friendly, energy efficient and aesthetically pleasing.

Solar panels were placed on the roof to provide energy for such things as ambient and task lighting. "The solar panels will power light emitting diode (LED) strips on each bench," said Curran. "Strips consisting of 50 little dots will light work areas more efficiently than the standard bench lights or light bar."

Solar tubes will provide natural light to the room. Unlike old-fashioned skylights, solar tubes use mirrored surfaces to expand the amount of natural light made available to the room, while keeping heat-loss to a minimum due to their small roof opening.

Curran stated that natural lighting increases the comfort level of employees and also makes them more productive.

The roof is made of a reflective material and designed to provide water reclamation. This feature will enable water that is collected from existing roof drains to flush toilets in adjacent rest rooms. Included as part of this system is an ultraviolet disinfection system that sanitizes the water being sent to restroom fixtures.

"I think all the employees who will be working in the DMOF will come to appreciate their surroundings," Dougher said. "I'm looking forward to hearing what they have to say about the new and different environment."

The next feature of the area is the presence of electronic technical data. All technical data will be available electronically at each workstation.

"This feature assures that users who are accessing technical reference orders, technical publications and test procedures will be using the most current version that is available," Curran said. "Some workstations will be equipped with dual monitors, so they can access test procedures and schematics concurrently."

An ESD control team, composed



Photo by Tony Medici

Paul McKiernan (left), electronics mechanic, and Bruce Lassley, electronic digital computer mechanic, are imaging laptop computers with MC4 software prior to shipment to the field. McKiernan and Lassley are assigned to the Computer Service and Repair Branch, C3/Avionics Directorate.

See "DMOF," Page 39

# C4ISR NEWS Interrogator technicians beat overhaul deadline by one month

**By Anthony Ricchiazzi**  
*Public Affairs Office*

TOBYHANNA ARMY DEPOT, Pa. — Technicians overhauled as many Patriot Missile System Interrogators in four months this winter as they normally do in a year to meet warfighter needs.

Technicians in the Air Defense Interrogator Branch completed six AN/TPX-46A (V)7 Interrogator Set overhauls 30 days ahead of the February deadline. The branch is part of the Intelligence, Surveillance and Reconnaissance Directorate's Surveillance Systems Division.

"The Patriot system is refurbished at Letterkenny Army Depot and they send us the TPX-46 for repair and overhaul," said branch chief John Glatz. "Letterkenny asked us in early October if we could complete six by the end of February, which is very unusual."

The Patriot Missile System is designed to shoot down enemy aircraft as well as incoming missiles. The Interrogator, which is part of the system, identifies friendly and foe (IFF) aircraft. Missiles are identified and tracked with radar. Tobyhanna has been repairing and testing the Interrogator for more than 20 years.

"We overhaul the AN/TPX-46 Interrogator Set, which means they are completely disassembled, sent to our support shops, reassembled and performance tested in accordance with Army standards. The Interrogator is like new by the time they are done going through our processes," said Franklin Frey, Surveillance Division chief.

Branch technicians conduct a 100 percent replacement of all parts that have been historically identified as high failure rate components. In addition the branch technicians troubleshoot, repair, test and replace components of the system as needed. Glatz noted that there are not many unusual problems. "Transmitters can be difficult to troubleshoot and repair, but the technicians handled this mission with no problems."

The Systems Integration and Support Directorate restores

faceplates by stripping them, making all mechanical repairs, then sandblasting and baking on a chip resistant paint.

"They restore identifying numbers and letters using a silk screening process," Glatz said. "Even door handles are disassembled and repaired, then painted using the same chip resistant paint process."

"Systems integration does an outstanding job; they make the systems look like new and the Interrogator branch makes them function like new," Frey said. "This mission is a testament not only to systems integration and the Interrogator branch, but the entire depot."

After all repairs and testing are carried out the systems are shipped to Letterkenny.

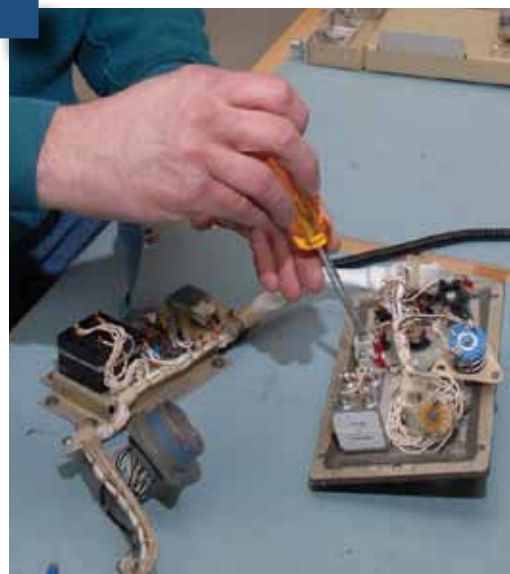
Tobyhanna technicians travel to Letterkenny where they install and validate the Interrogator in a Patriot Missile System hot mock-up and to Army standards.

Tobyhanna received funding to overhaul an additional three AN/TPX-46 Interrogators in fiscal year 2009.

Tobyhanna Army Depot is the largest full-service Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) maintenance and logistics support facility in the Department of Defense. Employees repair, overhaul and fabricate electronics systems and components, from tactical field radios to the ground terminals for the defense satellite communications network.

**Thomas Yankay, an electronics helper at Tobyhanna Army Depot, inspects the wiring harness on an Interrogator control unit, which is part of the TPX-46A (V)7 Processor.**

Photo by Tony Medici





# Harbormaster transitions from R&D

**Edric Thompson**  
CERDEC Correspondent

The Communications-Electronics Research, Development and Engineering Center's (CERDEC) Command and Control Directorate (C2D) leveraged its congressional plus-up funding to provide R&D dollars needed by the Harbormaster program of record to move essential technology to the production stage.

The transition was done in the spirit of the materiel enterprise management model of collaboration across organizational boundaries to provide Warfighters capabilities to maximize the benefit of every dollar.

"CERDEC doesn't pursue congressional funding, but we do receive it. We never want to spend it for the sake of spending, so we look to produce something that the Army wants," said Joseph Ryan, C2D Quick Reaction and Battle Command Support (QR&BCS) division chief.

Product Manager Command Post Systems and Integration (PdM CPS&I) found itself in a quandary because it had dollars to produce the Harbormaster, a command and control system that would improve Warfighter capabilities when managing harbors, ports and beaches. Unfortunately, the PdM had no R&D funding available.

"You can't get the authority to spend production funds unless you go through the milestone decisions. So as it was, there was no way to develop the project," Ryan said. The Harbormaster program looked like a good use for the funding: It was within the scope of the funding and it was an official program of record in the Army.

"We knew that we wouldn't be wasting the funds because in the end, the product would be going to meet an Army requirement that actually has production dollars – thus allowing it to be fielded. It was a win-win situation," said Ryan.

After three years of development, QR&BCS brought the Harbormaster to the required technical readiness level and transitioned the system to the PdM in a ceremony, Feb. 12, at the Aberdeen Test Center, Aberdeen Proving Ground, Md.

"All they have to do now is take the mature technology from us, begin production and start fielding the system to the Warfighter," said Edward Lye, QR&BCS, Battle Command Mechanical Design branch chief.

The upgraded, mobile facility features state-of-the-art technologies that allow it to function as a control tower in theater. Its sensors and communications capabilities provide situational awareness of all vessels and shore logistics, thus allowing the operator to direct shipping or receiving assets.

The mobile system, which is mounted on the back of a M1085A1, five-ton cargo truck, features



Photo by Edric Thompson

*The Harbormaster's four work stations feature sensors and communications capabilities that allow operators to monitor vessels and direct shipping or receiving assets.*

four work stations where operators have access to radar, primary and secondary camera sensors, commercial internet, the Global Command and Control System, and the Battle Command Sustainment and Support System.

Ryan called the research and planning that went into the three-year-long project "amazing," noting the amount of time and effort that goes into putting a system like this together.

"Just the engineering alone is significant because along with system design, you have to think about power levels, safety, size, weight, mobility, portability and other issues," said Ryan.

QR&BCS designed and developed the power distribution system, the Local Area Network interfaces, the network architectures, the interface to the ground-mounted antennas and satellite communications antennas, the work stations, operator space, the wiring and cords, and the day and night lights.

QR&BCS also integrated technology developed by the Program Executive Office Command, Control and Communications Tactical and commercial off-the-shelf (COTS) solutions, said Lye.

"The package the Quick Reaction & Battle Command Support Division has pulled together is absolutely tremendous. Here we have a program, which was created out of the 'dirt' and put together

with multiple systems. Now we're handing it to the program manager," said Product Manager LTC Terry Wilson.

"That's the beauty of the CERDEC; when they see there is a gap or a need, they have the ability to appropriately identify opportunities for funding and the funds that they do receive; they have the flexibility to go and do things that a lot of PdMs can't do. Harbormaster is just another example," said Wilson.

"They've reduced our acquisition timeline in being able to deliver capability to the Soldier. It's a clean, efficiently engineered integrated system, which we can continue to tweak and refine to provide a product that's decisive in what these units have to do," said Wilson.

Though QR&BCS has transitioned technologies in the past, Ryan is excited because Harbormaster is the first formal transition initiated by his division. "It's great to have top-notch electronics, but if we can't get them into Soldiers' hands, they have no value," said Ryan. "This is the way it's supposed to work: research and development centers develop technologies and PdMs produce and field that technology.

"That's what we're in business for, and the process is working at CERDEC as it was designed to."

# Concept for personnel recovery data blooms with new approach

By Ed Lopez  
CECOM Correspondent

While operating in a combat zone filled with constant danger, U.S. Soldiers could find themselves busting through a locked door only to find a man tied up in ropes, his mouth covered with duct tape.

Fifteen minutes later, the same man could either be in the back of a truck headed to another location for interrogation, or be free, receiving food and water from his rescuers. Which scenario unfolds will depend upon determining the man's identity.

Against a backdrop of a fluid, erratic war zone, a Soldier or civilian in a foreign country could easily become isolated, missing, detained or captured. In a conflict with no fixed front lines, the enemy might be just around the corner, waiting for a Soldier in unfamiliar territory to make a wrong turn and get lost.

Today, a vast database of critical information has been amassed that can be used in the event that a Soldier is captured. A dramatic increase in the size of the database occurred in a roundabout way, and centered on employees at the Software Engineering Center of the CECOM Life Cycle Management Command (CECOM LCMC) at Fort Monmouth, N.J.

To help identify Soldiers and civilians, the Army requires that personnel complete a digital Isolated Personnel Report (ISOPREP). The form may be completed during basic training, or by an Army civilian or contractor who is scheduled to enter certain theaters of operations.

The data in an ISOPREP is used to verify the identity of a Soldier who may later become missing or captured. The data is also useful if an enemy combatant tries to impersonate a Soldier.

"ISOPREPs have been around at least since Vietnam and were originally used mostly by aviators and Special Forces," said Matt Croke, Chief of the CECOM LCMC Operations Center. "Now, with a different type of warfare where there are no front lines, it is important that this form be used by all conventional forces."

While the need for ISOPREPs is clear, there was a time when completing the form presented several problems:

The data had to be filled out using a computer system that was so secure that

*"What system are you guys working on?" Croke was asked casually at the conference. "We have something here called PRO-File," he replied.*

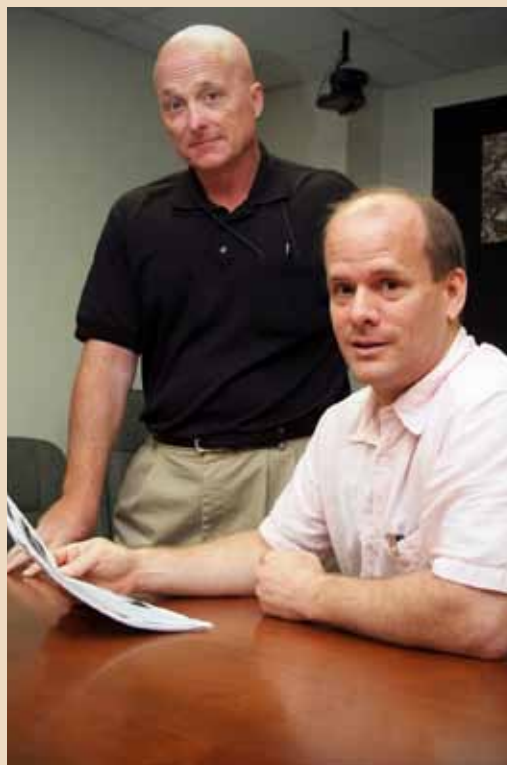


Photo by Mike Berry

*Happenstance guided how Chief of the CECOM LCMC Operations Center, Matt Croke (standing), and digital ISOPREP Developer and Project Manager, Mike Roberson became involved in how the Army now gathers valuable personnel data for deployments.*

*"We gave them another 10,000 like within a month," Roberson said. "Today, the number is about 400,000." In a typical week, more than 4,000 surveys are completed.*

Soldiers had to be escorted—and only a few at a time—to the computer location.

Certain parts of the form were confusing and difficult to complete.

Frustrated commanders were seeing countless training days slip away because so few Soldiers could complete the forms at one time.

Because the process was deemed so arduous, the majority of Soldiers didn't even have an ISOPREP, and for those who did, the information was often incomplete or inaccurate. At one point, Army ISOPREPs on file numbered as few as 10,000.

Having ISOPREP data available is an important component of Personnel Recovery. The Army defines Personnel Recovery as "the sum of military, diplomatic, and civil efforts to effect the recovery and return of U.S. military, DoD civilians, and DoD contractor personnel, or other personnel ... who are isolated, missing, detained, or captured in an operational environment."

As one Army document puts it, "Personnel recovery is the task of bringing our warriors home. It is part of the warrior ethos and must be embedded into every fabric of the Army. That fabric includes Soldiers, DA civilians, and DA contractors."

It was almost by happenstance that a quicker and better way to capture ISOPREP data was eventually deployed throughout the Army.

Several years ago, while attending a conference on Personnel Recovery, Croke got to know members of the Army G3 staff. Because the ISOPREP process could be cumbersome, making it more manageable was a common, informal topic at such conferences.

"What system are you guys working on?" Croke was asked casually at the conference. "We have something here called PRO-File," he replied.

PRO-File stands for Pre-OCONUS travel file. It was to be used by CECOM LCMC civilian employees before travelling outside the continental United States.

The developer of PRO-File, Mike Roberson (who is also the designer and project manager), works at the Software Engineering Center in the CECOM LCMC. Roberson is also the designer and project manager of the PRO-File system.

See **"PRO-File,"** Next Page



**"DMOF," From Page 35**

of members from the Productivity Improvement and Innovation and the C3/Avionics Directorates researched all aspects of ESD control, ranging from dissipative floors to ESD smocks.

"As a result of their involvement in this project, the Depot Maintenance of the Future area is expected to be a model area for ESD control," Curran said.

Wassell agrees. "The built-in ESD procedures reinforce the more stringent requirements of today's advanced systems and emphasize ESD processes required for AS 9110 certification."

The Information Management Directorate (DOIM) specified workstation computers and audio/visual support. In addition to providing improved sound and video systems, the DOIM is also using this area to demonstrate the many uses of three dimensional 3D holographic projection systems.

The DMOF facility will also feature state-of-the-art audio-visual presentations to demonstrate Tobyhanna's capabilities to customers and visitors.

"This facility will deliver a 3D visual and immersive sound experience that brings to life Tobyhanna's message of support to the warfighter," explains Ed Farrell, chief of

the Commodity Management Division in the Business Management Directorate. Farrell is the team lead on the marketing component of the DMOF project.

The 3D holographic projection system promotes the advancement of interactive 3D visualization, showcases new 3D technologies, enhances content development for educators and industry partners for education and training, and provides new methods for enhancing sales, marketing, maintenance and operations.

Using descriptive scenarios, a video projected on the glass walls of the facility will depict how Tobyhanna ensures support to the Warfighter in such areas as owning the night, force protection and communications, he explained. A power wall will present a 3D production on the future of depot maintenance, depicting how Tobyhanna can virtually project its capabilities wherever joint forces operate.

Depot engineers will use the power wall for computer-aided engineering demonstrations as well as workload design and development with customers.

Holographic staging and touch light displays complete the advanced presentation format. Touch light is an interactive tool using



Photo by Tony Medici

*Stephen Laskowski, electronics technician, images secure digital cards with Medical Communications for Combat Casualty Care software.*

infrared technologies that will allow customers and visitors to interact with 3D models of Tobyhanna-support equipment.

"As we conduct our external marketing, we will encourage customers and DoD leaders to visit Tobyhanna to experience first-hand our capabilities in these unique presentation formats," Farrell concluded.

"Employees will see a definite transformation as they walk from the depot of the present to the depot of the future," Sincavage said. "I'm looking forward to seeing everything come together as envisioned."

Several depot organizations, such as the Process Engineering Division, the Safety Office and the union, examined 3D model layouts and made recommendations for improvements. "The only reason that this aggressive schedule has been a success is due to the cooperation between many depot organizations and outside vendors," Curran said. "It is this cooperation that has kept this project moving forward."

Sincavage concurs. "Everyone working on this job has been outstanding," he said. "They've really had a vision to see this project through to the end."

**"PRO-File," From Previous Page**

"In the old days, one of the biggest problems with ISOPREPs was that you had to come up with four little stories about yourself that were factual," Roberson said. "Unless you were trained, few people could do it well."

To help standardize these "stories," Roberson came up with about 50 questions about notable events in a person's past, grouped in six "background" sections. At least four of the six sections must be completed.

PRO-File acts as the Army's interface with the U.S. Joint Forces Command Personnel Recovery Management System. Data entered into PRO-File surveys is automatically transferred to the Joint Personnel Recovery Agency. Only after the data is transferred to the Secure Internet Protocol Router Network is it transformed into an ISOPREP.

A key strength of PRO-File is that it doesn't require access to a highly secure computer system. Therefore, a person who has an Army Knowledge Online (AKO) account can complete the PRO-File survey at home or in the barracks,

24 hours a day, seven days a week.

"It went from being the most restricted access possible to the least restricted," Roberson said. Since PRO-File was implemented Army-wide, the number of completed ISOPREPs has skyrocketed.

"We gave them another 10,000 like within a month," Roberson said. "Today, the number is about 400,000." In a typical week, more than 4,000 surveys are completed.

Martin Griffith, an operations analyst with the Army's Personnel Recovery Branch, participated in the early development and roll-out of the PRO-File system.

"We sat down with the guys at Fort Monmouth and started talking about requirements," he recalled. "They already had an initial model, but we really built it and tested it for the next six to eight months."

PRO-File was demonstrated to the Army Vice Chief of Staff, who gave the thumbs up that led to field testing at Fort Campbell, Ky. "We had outstanding results," Griffith said. "We tested it

to the limit, over-using and abusing the system, putting in 3,000 ISOPREP surveys an hour."

The 101st Airborne Division served as a further "test bed" for the system. "They were getting ready to deploy to Afghanistan and were able to get the data into the system before deployment," Griffith remembered. "I would say that this is one of the best success stories I've seen in Personnel Recovery in the Army," Griffith added in reference to Personnel Recovery capabilities.

The PRO-File system allows Soldiers to devote more time to the training and preparation needed to achieve their missions.

Greater accuracy and a greater number of ISOPREPs on file is PRO-File's contribution to the recovery of Soldiers or civilians who may become isolated on hostile soil.

"A relatively simple application, that was put together relatively quickly and relatively inexpensively had a big bang in a big way," said Jeff Zovak, chief of customer application development at the CECOM Life Cycle Management Command Software Engineering Center.

# Personnel strategy shaping future

By Erika L. Valerio  
CECOM Correspondent

It is hard to ignore the developing campus of Army Team C4ISR's Center of Excellence at Aberdeen Proving Ground, Md. As the structures grow, leadership maintains their focus on the team's most valuable resource: their people. Looking forward to the CECOM 2015 Vision, Army Team C4ISR has developed a human capital strategy, developing specific plans to maximize relocation, hire the successor workforce, and retain critical skills.

## Early Movers

Instead of waiting for the new buildings to be complete, Army Team C4ISR offered early relocation opportunities to over 650 volunteers to date, moving them into temporary office space. In order to make a smooth leadership transition, they hired at above authorized strength levels at APG, including some duplicate leadership positions. Deborah T. Devlin, CECOM LCMC G1, explains: "One of the things we are working is our early movement strategy, to build core leadership and subject matter expertise at APG prior to our main moves. This will allow us to intake more employees at APG and develop the competencies that we need sooner than if we waited for all of the losses to occur when the moves happen."

## Early Movers' Perspectives

Every volunteer has different reasons for making the decision to relocate. Chris Newton, a CECOM LCMC G1 recruiter and early mover, could not be happier about his decision. "I think it is an awesome opportunity to advance your career, to be a pioneer, like Lewis and Clark. I've always been one to follow the road less traveled. I knew there were going to be issues and challenges when I came here, and I liked that."

Newton's adjustment has gone smoothly, thanks in part to advice from locals and other early movers. "Connecting with local people helps bring it back home. They helped me to understand the area, the culture. I got the inside scoop." The Team C4ISR Knowledge Center Blog was also a valuable resource for Newton. "I checked it quite frequently. I saw posts from people who had dealings with things like the DMV (Maryland Department of Motor Vehicles). It gave me a heads up, so I was prepared when I got there."

Joann Dunn, also from G1, explains her decision to relocate, "The opportunity availed itself at the perfect time for me. The exceptional opportunities that are down here were very exciting to me, a new life, and a new environment. The ability to work in the midst of other organizations with the ADVON (Advanced Echelon) group has been great. The physical location allows me to



Photo By Christopher Newton

*COL Augustus Owens and Army Team C4ISR early movers capture a moment with the Aberdeen Ironbirds professional baseball team mascot, Ripcord, outside the Gunpowder Club at Aberdeen Proving Ground, Md.*

see things and interact with people I wouldn't have interacted with before. It has given me a really broader view of what our command is."

The best advice for early movers, Dunn said, is to communicate with the sponsors.

***"We call the people that come early our pioneers. I think they feel pride in being some of the first here. APG is a place that is going to be not just a Team C4ISR Center of Excellence, but a Center of Excellence for the Army and the Department of Defense, with a mission to equip our warfighters. I think that's exciting ..."***

***Karen Quinn-Doggett***

"You're dealing with so much, there are so many unexpected things. It is a very stressful time and when it hits you, it hits you. Everyone is assigned a sponsor, people need to feel comfortable to talk to them, and ask questions. There is so much info that comes your way when you're preparing to PCS (primary change of station move) that you just don't know."

Mike Lombardi, an associate director within the Communications-Electronics Research, Development and Engineering Center moved early to pursue a great professional opportunity and, like Dunn, also encourages movers to communicate with their sponsor. "When you first get here you don't know where the good restaurants are, the banks, or the ATM's. It's nice to have somebody that you're connected with to knock down some of the hurdles."

"Moving is not easy, it's a lot of work and stress. Anything you can do to reduce the stress is key, and the sponsors are a big part of that," he said.

Lombardi feels it is essential to get your home life set up before diving into work. "Get your home processes down, and get the boxes unpacked. I made the mistake of jumping into work. You move and immediately want to make an impression in a new job. You don't want to miss anything, but, take the administrative leave. Take that time. Find your iron."

***Taking Care of Early Movers - Mitigating Turbulence***



**TRANSITION FACTS:** *As of late May, there were 429 'boots on the ground' at APG, and this summer an additional 528 employees from Fort Monmouth are expected to join them. By the end of December, approximately 1,400 Army Team C4ISR personnel are expected to be working at APG.*

Karen Quinn-Doggett, supervisory assistant to the deputy commander CECOM LCMC (Forward), talks about the excitement many early movers experience. "We call the people that come early our pioneers. I think they feel pride in being some of the first here. APG is a place that is going to be not just a Team C4ISR Center of Excellence, but a Center of Excellence for the Army and the Department of Defense, with a mission to equip our warfighters. I think that's exciting. It's a once in a generation opportunity, and a brand new facility."

There is a forward team ready to welcome early movers and new hires as soon as they arrive at APG. Deputy Commander, CECOM LCMC (Forward), COL Augustus "Fritz" Owens, and his team have developed a plan to make people feel

like a part of the community. G1 has established an in-processing program at APG. Owens' team hosts monthly fireside chats with speakers from APG and the local area, monthly meet and greets, holiday socials, and organizational days. "The primary mission here at CECOM LCMC (Forward) is taking care of our ADVON, our early movers," said Quinn-Doggett. When it comes to social events, she encourages employees to involve their families because, as she says, "the early movers' families need a network, too."

#### **Hiring the Successor Workforce**

Army Team C4ISR anticipates the need to hire 1,400 employees prior to closure of Fort Monmouth and 1,750 employees after the completion of moves to Aberdeen Proving Ground. Recruitment is clearly a top priority. "We have a pretty good handle on the numbers and types of skills that we'll need to recruit as a result of our workforce surveys and one-on-one supervisor employee discussions," says Devlin.

Army Team C4ISR recruiters are a persistent presence at college and university career fairs, attending 76 fairs this past fall and spring semesters. The team has done extensive marketing including reaching out to transitioning military personnel, utilizing programs like the Wounded Warriors Program and Always a Soldier.

The recruiters are also focusing efforts on full-performance candidates, and have held two Base Realignment and Closure job fairs focused on full-performance candidates in the APG area. The most recent BRAC job fair in February attracted over 2,500 attendees.

The recruiters are also participating in the Partnership for Public Service Program, which



Photo by Christopher Newton

*Family members are encouraged to go to the "Fireside Chats" where by networking, family members, too, can begin to rebuild social networks strained by the relocation to Aberdeen Proving Ground, Md.*

seeks to match executives retiring from the private sector with public sector opportunities. Another avenue for recruitment has been placing graduates from Senior Service Colleges into leadership positions. As a result of their extensive efforts, Army Team C4ISR has over 3,600 resumes of interns, students, and full performance job candidates.

The DOD Expedited Hiring Authority for Acquisition Workforce positions will aid the extensive hiring effort, making it easier to reach out to candidates outside of government. Other initiatives to enhance retention and relocation are in the works, such as a request for excepted

See "People" Page 48



## **Early Mover:** *Used to change, logistician Joey Beteta takes family to APG*

**Andricka Thomas**  
*Forward Correspondent*

"For me, this is my career so it wasn't a matter of if I was moving, it was a matter of when," said Joey Beteta, logistics management specialist, CECOM LCMC Logistics and Readiness Center.

"If my job is moving, my first priority is taking care of my family, which means, I go where my job goes." Beteta and his wife, Mindy, have two children, 12 and three-and-a-half years old.

Beteta is no stranger to relocation, as he spent five years in the military. His wife, however, is a New Jersey native, and has strong ties to family in the state. "But she is up for the challenge,"

said Beteta with a smile.

He said he and his family took several trips to the APG area to house hunt. He settled in Aberdeen in a new housing development, easily accessible to APG North.

"We walked into the model home for this development and knew right away this was the place for our family," he said about his newly purchased home. He closed on his house May 1.

"You must visit," said Beteta. "Seeing the area, and driving around makes a world of difference. Don't always believe what you hear, come down for yourself, explore the area and then decide what is right for you and your family."

Beteta advises movers to

take advantage of the bus trips and the government-sponsored six-day house hunting trips. The G1 will be able to provide more information about the relocation benefit packages for movers, according to Beteta.

Advice: "Take advantage of the bus trips. Visiting the area really helped us decide where we wanted to live. Check out the entire area."

"There are many places to live that are accessible to APG. Moving early was great because I was able to take advantage of the housing market before the masses migrate to the area. If you have a family, include them in the process and think of it as a family adventure."

"Change can be good."



Courtesy Photo

*Joey Beteta, logistics management specialist, CECOM Logistics and Readiness Center, his wife Mindy, daughter Melin, 12, and son Nico, 3, visit the Baltimore Inner Harbor.*

# Team performing split-based ops

**Andricka Thomas and Rebecca Shinneman**  
CECOM Correspondents

ABERDEEN PROVING GROUND, Md. – During a deployment, Soldiers know what it takes to conduct split-based operations in the desert, in the mountains, virtually anywhere duty calls. However, when the Army relocates an organization made up primarily of civilians responsible for complex technological systems, executing the move without interrupting support to the warfighter becomes a critical priority.

The 2005 Base Realignment and Closure law mandated that Army Team Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance, relocate its organizations and functions to Aberdeen Proving Ground, Md., “without disruption of their support to the Global War on Terrorism or other critical contingency operations” and with safeguards enforced “to ensure that necessary redundant capabilities are put in place to mitigate potential degradation of such support, and to ensure maximum retention of critical workforce.”

In plain language, BRAC law dictates that the mission will not be interrupted, said COL Augustus L. Owens, deputy commander, CECOM Life Cycle Management Command (Forward). He added that as Army Team C4ISR organizations relocate to APG, there will be an urgent need to maintain support to warfighters—including the delivery of systems, equipment and services to the field.

With that requirement in mind, an Army Team C4ISR BRAC Task Force was developed in August 2007 to plan and develop an integrated strategic concept plan to determine and set conditions for a successful relocation to Maryland.

Owens arrived in July 2008 to set up the CECOM LCMC forward operation at APG. His mission: “to take care of the workforce.” MG Dennis L. Via, commanding general, CECOM LCMC, tasked Owens with organizing an effective forward operation and managing the smooth relocation of personnel from Fort Monmouth and other locations during the BRAC transition. Establishing an effective in-processing system there was at the top of Owens's list.

“We have come a long way in our in-processing procedures,” said Owens. “We’ve developed procedures that ensure a CAC card [Common Access Card] and computer access are available to incoming employees here within their first week of arrival.”

Presently, the Fort Monmouth headquarters arm of Army Team C4ISR organizations handles the planning, technical, resourcing and funding



Photo by Andricka Thomas

*Bob McNabb (left), safety and occupational health specialist with the CECOM Life Cycle Management Command Directorate of Safety, meets with Burt Cummings, radiological engineering division, CECOM LCMC Directorate of Safety, at the Gunpowder Club at Aberdeen Proving Ground, Md.*

aspects of organizational operations, according to Owens. He views his Forward team effort as an opportunity to transform and improve business practices while organizations are in the process of relocating.

“We haven’t dropped the ball once during this move, and that is the pattern we will continue as we see this move to fruition,” said Owens.

Owens stressed he has been receiving an incredible amount of support from his Fort Monmouth counterparts. “It’s a team effort. Even those employees who will [eventually] not move with their organizations remain supportive of our efforts,” said Owens.



Photo by Andricka Thomas

*A view of the Gunpowder Club at Aberdeen Proving Ground, Md.*

For most CECOM LCMC (Forward) and Army Team C4ISR (Forward) employees, their leadership and supervisors are still located at Fort Monmouth. Given this long-distance separation and their dynamic work environment, all those employees are expected to function as self-starters in support of their missions. As the deadline of Sept. 15, 2011 approaches for the full implementation of BRAC law, the mission of advanced party personnel will shift more and more from setting up new processes to managing technical functions.

Working in a split-based environment isn’t a new experience for some C4ISR members.

The CECOM LCMC Software Engineering Center has historically engaged in split-based operations as part of its normal organizational alignment, according to Nelson H. Keeler, director, CECOM LCMC SEC. The SEC organization has components located throughout the world to include Forts Belvoir, Lee, Sill and Huachuca; and locations in Korea and elsewhere. “In many aspects, the SEC organization already operates in a split-based mode and will capitalize on that experience while making the Fort Monmouth and portions of SEC-Belvoir transition to APG,” said Keeler.

“Instead of looking at what functions I can



## Early Mover: Al Perrella: New area not much different from Monmouth

By Andricka Thomas  
Forward Correspondent

"I grew up about five minutes away from Fort Monmouth," said Al Perrella, health physicist, CECOM LCMC Directorate for Safety. For Perrella, his attachment to Fort Monmouth goes back about 15 years, when he started in 1993. But when he found out his job was moving, he chose to look forward, and secure his family's future. Perrella and his wife have one son.

"I wanted to get my son settled in a community before he started school," said Perrella. He

purchased a home in Bel Air, Md., just minutes away from APG. "The schools are good in this area," he said. "The toughest thing about this move was leaving our families and the beach.

"We're adjusting to not having family close by," said Perrella. "But it is only a two-and-a-half-hour drive back home so we know we can visit anytime." Perrella, a self-proclaimed "beach boy", said he does miss the accessibility to the beach. "Here, it's [the beach] a few hours away, so I can't go as frequently as I'd like to. But there are plenty of other things to do in this area," he said. Perrella

said the area is strategically placed, so Washington D.C., Baltimore, Delaware and Philadelphia are all about an hour away.

"I've been to the cities around here [Baltimore and Washington D.C.] quite a few times since I moved here," said Perrella who moved to the area in August of 2008. "We love our house, because we are away from the 'hustle and bustle', but can find action and city life when we choose to."

"It's always scary to pick up your family and move away from what you are used to," he said. "But if you do some research and visit

a few times before moving, the transition will go much smoother. It made us more comfortable with the decision to move."

Advice: "Talk to the local residents and do your research. It's your life, your move and your family. Don't solely depend on the information distributed; take a look into it yourself. Visit the area. My move went smoothly, and the movers were great. Thankfully, I had no problems. I have found that this area is not that different from Monmouth County and am discovering the charm this city has to offer."

move to APG; I looked at what functions I can't move from Fort Monmouth to APG," said Keeler, who was assigned to APG upon becoming the Director of SEC. He said excluding the work dependent on access to their unique labs at Fort Monmouth, most other SEC functions can operate in other locations.

A key element contributing to the success of split-based operations is providing the tools needed to increase communications between different locations and organizations, according to Keeler. "You not only have to provide leadership during a transition such as this, but provide the necessary tools to get the job done successfully," he said.

With that purpose in mind, Keeler increased the SEC's video-teleconferencing capabilities; enabled some workstations to engage in web video conferences; and bought more air cards for internet accessibility on laptops to provide workstation capability in multiple locations. He also purchased three government vehicles to curb the costs of business trips to Fort Monmouth; encouraged his personnel to obtain government drivers' licenses; and increased the number of cell phones and laptops issued to employees to further enable communications off-site.

Keeler believes in leading by example, which is why he has encouraged SEC senior leaders to volunteer to move to APG early to set the example for the SEC workforce.

"As this transition progresses, I want our personnel to feel welcomed and taken care of as they move to Maryland," said Keeler. He provides a sponsor for each SEC relocating employee to help assimilate them to APG and the community, whether or not they have had a chance to request a sponsor.

The CECOM LCMC Logistics and Readiness Center (Forward) started the transition last



Photo by Andricka Thomas

*MSG Walter M. Farrell, senior enlisted advisor, CECOM Life Cycle Management Command (Forward), speaks with Mark A. Smith, logistics management specialist, CECOM Life Cycle Management Command, outside of the command suite at the Gunpowder Club at Aberdeen Proving Ground, Md.*

July when it hand-picked an advanced party team to scout out facilities and capabilities available at APG.

Jim Meredith, director, CECOM LCMC LRC (Forward), was one of those hand-picked to relocate to APG to establish a forward operation for the LRC. He credits the success of the LRC forward team to the pro-active, pioneer spirit of the advanced party staff members.

"Whatever the task or obstacle, our team here finds a way to overcome it and press on," said Meredith. He said the forward team works hard to maintain continuity of functions as they negotiate the move to APG. Currently, most of the functions remain at Fort Monmouth. However, the LRC forward team maintains close contact with the headquarters in New Jersey through video-

teleconferencing, common databases and other communication tactics to function as a single team for seamless service to their customers.

"We were sent in a reconnaissance capacity to validate that this area was a suitable place for the LRC to effectively function from, and we've found that it is," explained Meredith.

Meredith said the move to APG is a once in a lifetime opportunity to reorganize and change the way the LRC does business. "Our director, Dave Sharman, has developed a reorganization to streamline the support to the PEO [Program Executive Office] community," said Meredith. Effective July 19, 2009, the LRC's weapon systems directorates will be reorganized into functional areas, according to Meredith. "Each functional area will be self-contained, to provide the maximum support possible to the customer, and in turn the warfighter."

Dave Sharman, director of the CECOM LCMC Logistics and Readiness Center, is set to relocate to APG this summer to lead split-based operations and reconstitution of the Army C4ISR mission at APG.

A member of the Senior Executive Service, Sharman will be the senior CECOM LCMC Army civilian member of the command's advance presence at APG responsible for leading all split-based operations, reconstituting the CECOM LCMC mission, and maintaining mission continuity until relocation of the command headquarters.

Commenting about Sharman's new role, Via said, "we're very pleased that Mr. Sharman has accepted to take on this new role and associated duties at APG to provide continuity of our C4ISR mission until relocation of the command headquarters in 2010.

With well over 1,000 C4ISR personnel

See "People" Page 48



# Intern Insights:

## *CECOM's Contracting Center Interns share views on workforce development*

By Kailyn Bloom, Katrina Lloyd and Teesa Roberts  
Acquisition Correspondents

"It's all to do with the training: you can do a lot if you're properly trained," Queen Elizabeth II said. This also appears to be one of the driving philosophies of the CECOM Contracting Center. Always striving to have the best workforce on hand, new and existing employees have ample career development opportunities and complete hours of training each year.

As a result of the 2005 Base Realignment and Closure (BRAC), many new hires are entering the Contracting workforce. The Contracting Center provides internal training to ensure all employees are proficient in contracting in support of the Warfighter and takes a very hands on approach in training new hires.

The first segment of training is the Intern Institute. It's a six week course that trains interns on the ins-and-outs of contracting including contract procedures, programs and regulations. The course gives interns an in-depth breakdown of contracting, allowing someone who is new to the profession to see an overview of working an acquisition from beginning to end. While immense amounts of time are not spent on every

***"(With) the seasoned workforce diminishing, the more senior interns are training the newly hired interns."***

subject, the instruction does give insight on what is to come.

While at the institute, interns participate in group activities, such as mock negotiations, in order to prepare them for negotiations on the job. The institute also provides interns the opportunity to share their experiences and cultivates learning and broadens their horizon.

In the words of Aristotle, "What we have to learn to do, we learn by doing." While the Intern



U.S. Army Photo

*Contract Specialist Peter Taylor instructs newly appointed interns about the importance of using the Federal Acquisition Regulation in contracting.*

Institute gets interns' feet wet; now it's time to jump in the pool.

On-the-Job-Training is an essential way to reinforce the subjects previously learned and apply their knowledge to real world scenarios. Contract Specialists guide interns, walking them through their initial contracts.

In addition to the on-the-job training, interns are required to complete a series of Defense Acquisition University classes in order to become Level I and Level II certified in Contracting. The interns are given two years to complete the mandatory classes, which are provided as either Web-based or resident courses in various locations, providing them with the necessary knowledge and tools to ensure the Warfighter, as well as taxpayers, are getting the best at a fair and reasonable price.

As interns begin to foster this new knowledge and experience, it becomes increasingly more difficult for them to leave their work behind and attend the resident courses, which makes the web-based courses so appealing to interns at first glance. It gives them the flexibility to complete the classes within 60 calendar days while maintaining a productive work schedule.

As interns have a chance to attend the resident courses they realize that the hands on, face-to-face experience is as valuable as the web-based courses. Interns have the chance to meet with the professors and ask questions and get responses that they may not be exposed to during the web-based courses. Interns are also given the opportunity to network and meet with other individuals from various organizations and they walk away with a more diverse understanding of contracting than the web-based courses are able to provide.

A former Contracting Officer once said,

"when you're able to teach someone else what you've learned; then you really know it."

Interns are increasingly able to comprehend what the Contract Specialists teach them to the point where they are able to train newly hired individuals on the different programs, procedures and regulations. Based upon the amount of interns increasing and the seasoned workforce diminishing, the more senior interns are training the newly hired interns.

Whether starting at CECOM directly out of college or transitioning to a new career, it is obvious that the Contracting Center is a magnificent place to be. The work that is produced every day is vital to the men and women overseas fighting to protect their fellow Americans. The fact that CECOM has such an outstanding training regimen allows this work to continue without missing a beat. Despite an aging workforce, there is no doubt that CECOM will continue to be the premier Contracting Center, thanks to the training instilled in its interns. At the end of the day it is always the same- One Vision, One Mission, The Warfighter.

### ABOUT THE AUTHORS

**Kailyn Bloom** is currently in her first year as a CECOM Contracting Center Contract Specialist (Intern), working on research and development contracts. She will become Level I certified in September.

**Katrina Lloyd** is a CECOM Contracting Center Contract Specialist (Intern) working on Research and Development contracts. She will become Level 1 certified in August.

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# Students developing as developers

By Kim Himstreet and  
John Oltarzewski  
Software Correspondents

In 2001, high school senior Robert Monto was not sure which branch of the engineering field he wanted to pursue. He would never guess that his application for the Student Career Experience Program (SCEP) at the Army's Software Engineering Center (SEC) in nearby Fort Monmouth would set him upon a career path he still follows seven years later.

Monto worked as a software developer at the SEC while studying software engineering at Monmouth University in nearby Long Branch. In 2005 he accepted a full-time intern position in what would be the Command and Control Software Directorate and is now the Deputy to the Assistant Product Manager for Maneuver Control System.

"I'm not sure I would have ended up working in the public sector without the experience and opportunities SCEP provided me," said Monto.

SCEP is a Department of Defense Office of Personnel Management initiative allowing high school and college students to gain paid work experience directly related to their academic program.

**"You need to have good mentors who'll give the students the attention they deserve, ..."**  
**Lisa Heidelberg**

Unlike the summer internship programs typically offered at private companies, SCEP participants work at the SEC throughout the year, gaining exposure to public service while enhancing their educational goals and shaping their career choices.

SCEP offers participants a flexible work schedule on a part-time or full-time basis, often with benefits such as leave credit, health



U.S. Army Photo

*Student Career Experience Program participant Christopher Hosson and comptroller intern Laura Pannucci at work in the Software Engineering Center Contracts Office.*

and life insurance.

After evaluating the students in real work situations, managers can invite strong performers to remain in the program until their graduation from college, whereupon they have an excellent chance of being hired as full-time employees.

As was the case with Monto, and by identifying and recruiting talented candidates like Monto as early as high school, SCEP allows the SEC to compete favorably with private sector firms seeking to fill similar positions – particularly for information technology and software

engineering jobs – where qualified graduates often receive several job offers.

"SCEP is a great benefit to us," said SEC Intern Coordinator, Joe Wall. "Each SCEP student comes to us at a relatively low cost with a high return based on productivity and output, and we have the chance to non-competitively hire them upon graduation."

That is exactly what happened

with Michelle Dirner, who worked at the SEC as a SCEP participant during her senior year at Rutgers University.

As graduation approached in 2002, Dirner was considering jobs with several government contractors. SEC beat their best offer, not only providing her with a full-time position, but also fully funding her master's degree in software engineering. Six years later she is a Data Services Team Lead at the Army Net-Centric Data Strategy Center of Excellence.

Mentoring is critical to the SCEP program's success for both students and employers.

"You need to have good mentors who'll give the students the attention they deserve; otherwise the output will not be as good," said Lisa Heidelberg, Director, Command and Control Software, who hired 13 SCEP students last year to work as developers, testers and network administrators.

The SEC's use of the SCEP program has expanded in recent years as Overseas Contingency Operations and high military operational tempo have increased the demand for the SEC's services.

In fiscal year 2004 the SEC hired four SCEP students and 21 interns (recent college graduates who work full time while obtaining their master's degrees). Last year, these numbers had increased to 24 high school and undergraduate students and 45 interns.

By investing time up front, their teams reap long-term rewards. "SCEP students want to work for us when they graduate and by then they are already embedded in our processes and the way we do business," said Heidelberg. "Our training is at a much lower cost than for someone hired right out of college with no experience and no knowledge of our organization."

The majority of SCEP hires are retained as full-time interns after graduating college. The SEC has allocated funds for them to obtain master's degrees in software engineering from a local university.

While most interns and SCEP students pursue technical degrees in information technology and computer engineering, they are placed throughout the SEC, supplementing permanent staff in the Warfighter, business, and integration and operations mission areas.

## Early Mover: 'Jersey Boy' Christopher Newton takes to new surroundings

By Andricka Thomas  
Forward Correspondent

"'Jersey Boys' don't move around too much," said Christopher Newton, human resources specialist, CECOM LCMC. "We may travel the world, but we always return," he said with a smile as he thinks back to his recent trip to Europe.

A graduate of Fairleigh Dickinson University in north Jersey, Newton, 25, decided to step outside his comfort zone and move to Aberdeen Proving Ground. Newton was born and raised in New Jersey, but felt that this move was an opportunity he couldn't pass up.

"I believe in taking the road less traveled," said Newton. "Out of change comes new op-

portunities." He admits he had some nervousness about the physical aspect of moving, as this was his first big move since college.

"I was impressed with the logistics of the move," he said. "They took good care of my possessions."

Newton reported to his new APG position in January of 2009, and said that his paperwork went smoothly. He recommends filing any claims as early as possible to allow time for it to get processed.

An avid traveler, Newton enjoys the small town feel of North East, Md. "It wasn't an area I originally thought I would move to, but I like the small town feel and the accessibility to live, eat and play on the water," said Newton. He said he enjoys watching the boaters on the Chesapeake

and Susquehanna and the fact that he is just a couple of hours drive from home. He describes the North East area as quaint.

"Believe it or not, New Jersey isn't all that different from Maryland," said Newton. "I found that Red Bank is quite similar to the Mount Washington area of Baltimore. There's something here for everyone."

Advice: "Try to connect with advanced party movers. I would really like to see ADVON movers post their experiences onto the Army Team C4ISR Knowledge Center or our blog. I think reading lessons learned will be helpful for people in transition from Jersey. I also recommend that people take advantage of the bus trips to Maryland. They helped me a lot in deciding where I wanted to live."

## Army Team recruiting past recruits

By Andricka Thomas  
Forward Correspondent

Transition seems to be a constant in military life. Since the congressionally mandated 2005 Base Realignment and Closure (BRAC) law was announced, affected military installations began preparations to receive and transition personnel to and from other assignments.

This command has identified its recruitment needs for its transition to Aberdeen Proving Ground, Md.

Recently, the CECOM LCMC and Army Team C4ISR participated in an Employer Networking Event at Walter Reed Army Medical Center, Wash. D.C., hosted by its Garrison, Human Resources Directorate, Transition Employment Assistance Management Service or TEAMS.

"We know and appreciate the sacrifices that Soldiers make. The skill sets Soldiers acquire while on active duty are valuable to our mission," said Command Sgt. Maj. Tyrone Johnson, CECOM LCMC. "We want to raise awareness about the job opportunities. By participating in an event like this one, we can speak directly to wounded warriors and Soldiers in transition and let them know we are interested in what they have to offer."

The monthly job fair was originally established to directly link Soldiers in transition with employers, according to Alicia Ross, corporate employment coordinator with TEAMS.

"Here, the employers are from the federal and private sector," Ross said. "In fact, we have opened up the job fairs to our entire Walter Reed population, including active duty Soldiers, Reservists, wounded warriors, DA civilians and contractors."

Walter Reed is scheduled to close as a re-



photo by Andricka Thomas

*Ssgt. Pauline Sedano, supply specialist at the Uniformed Services University of Health Services in Bethesda, Md., talks with Chris Newton, CECOM Life Cycle Management Command human resources specialist, about the available career opportunities with the command during an Employer Networking Event at Walter Reed Army Medical Center, May 14.*

sult of the 2005 BRAC implementation scheduled for completion by September 2011.

The job fair is part of a larger program designed to assist personnel in transition, to include resume development, interview techniques and career coaching and counseling.

"We aim to link qualified Soldiers with employers to help facilitate a smooth transition to civilian life," said Donald Walker, federal employment coordinator with TEAMS. "I look forward to establishing partnerships with other organizations."

Army Team Command, Control, Communications, Computers, Intelligence, Surveillance

and Reconnaissance (C4ISR) provided a list of current job announcements to job seekers and informed applicants about the different programs available within the organization.

Christopher Newton, CECOM LCMC human resource specialist, engaged each applicant to help identify where their skills may be best matched to compete for current C4ISR job vacancies. "I learned a lot about the organization [C4ISR and CECOM LCMC]," said Staff Sgt. Pauline Sedano, a supply specialist stationed at the Uniformed Services University of Health Services who spoke with Newton. "This event was very helpful."

The job fair and other transition services are open to the entire Walter Reed population; however, personnel in transition from other areas are also welcome to information and resources that TEAMS has to offer, said Walker.

"We assist Navy, Air Force, Marines and Army personnel," said Walker. "If you're active duty or a Reservist, we're here for you; if you're a vet, we're here for you; if you're a DA civilian, we're here for you; if you're a spouse, we're here for you."

Walker said one challenge they face is identifying the skill sets a Soldier has and does not realize, putting them down on paper and transferring those skills into a resume.

"We overcome our challenges by talking to Soldiers to help them identify their skills and showing them on paper that they have relevant experience they, perhaps, didn't realize," Walker said. He said he looks forward to a partnership with Army Team C4ISR and CECOM LCMC in the coming months. "If you participate, we will provide a venue to get your job information out there to our population," Walker said.



## Spectra People Power Focus: Curtis Crawford

# Warrior rejoins Army in R&D community

Sharon Rushen

CERDEC Public Affairs Office

"When it's your time to go, it's your time to go - you never know when it's gonna be. I've cheated death a bunch of times, but the bottom line is that I still get to work with Soldiers."

The sarcastic, light-hearted nature of Curtis Crawford is that of a man who is not fazed by much. His words to live by are "mind over matter," a philosophy he adopted during his years in the 1st Cavalry Division and 101st Airborne Division.

Crawford has rubbed elbows with the grim reaper more than once.

Having spent the better part of his mid-thirties in the Middle East, the Army veteran has deployed to Iraq twice, been hit by multiple improvised explosive devices (IED's) and shot three times.

But at age 40, Crawford isn't slowing down and looks forward to this next chapter with the Army. Following his last battle-wound in 2006, the two-time Purple Heart recipient traded in his camouflage for a quality assurance position with the Communications-Electronics Research, Development and Engineering Center's (CERDEC) Product Realization Directorate (PRD).

Having used some of the equipment he will be working with, Crawford hopes to be able to use his experience to relate better to the Warfighter.

"I decided that if I can't stay in the front line and run with my Soldiers, I can stay in the back and support them," Crawford said. "I'm looking forward to it. I can take my boots-on-the-ground experience and run with it here."

Crawford started working with the Army in 1987 but wasn't deployed until 2003. He first enlisted in the National Guard as an infantryman.



Courtesy Photo

Curtis Crawford (left) and Jared Feldman after receiving their Purple Hearts at Fort Campbell, Ky.

***"I was starting to feel sorry for myself, but I walked into the physical therapy room, and I saw a guy that got hit by an IED. He lost his legs from his knees down, and he lost his arms from his elbows down, but here I came walking in with my legs, arms and fingers fully intact."***

***-Curtis Crawford***

"When 9-11 hit, I put on the suit again and decided to deploy to Iraq," Crawford said.

During Crawford's first deployment, he worked in a personal security detachment at the U.S. Embassy in Baghdad, Iraq. Crawford was shot for the first time in Fallujah, but his bullet proof vest prevented serious injury.

Afterward, Crawford was granted 12 months of stabilization in the U.S. Crawford came home in April 2005 and returned to Iraq that October when offered the opportunity to lead a team with the 101st Airborne Division.

"Getting to the 101st Airborne Division was a dream come true," he said. "I always wanted a unit of that caliber. I had a really good fire team; I couldn't ask for anything better."

Crawford was in Iraq for only a month before a sniper found Crawford from 250 meters out. Though the bullet only grazed the side of his helmet, it hit a vehicle's windshield, sending shrapnel across his face and exploding his eardrum.

His close friend and fellow Soldier, Jared Feldman, was victim to a similar injury from the sniper's second round of fire.

Crawford and Feldman were awarded Purple Hearts and have matching Purple Heart tattoos on their right forearms.

"It's because you use your right arm to salute the flag and an officer that you work with," Crawford said.

When Crawford was shot for the third time in January 2006, the bullet went through his chest and out

his back. Unsure if he would live, Crawford borrowed a cell-phone from someone in Baghdad Hospital to break the news to his wife.

"She broke down at first - I just told her 'I've been hit, and I'm on my way to the operating room. I love you, but I don't know what's going to happen,'" he said.

At one point, Crawford's heart stopped and his vitals crashed. Once he was stabilized in Baghdad, Crawford was flown to Germany for surgery and then to Walter Reed Army Medical Center where he was on life support until his recovery.

Suffering from traumatic brain injury and post-traumatic stress disorder, Crawford had to relearn a lot of processes, including walking. Still, he was disappointed that he couldn't return to Iraq.

"I wanted to get back in the fight so bad because we needed every single body we could possibly get, but physically, I couldn't do it," he said.

"I was starting to feel sorry for myself, but I walked into the physical therapy room, and I saw a guy that got hit by an IED. He lost his legs from his knees down, and he lost his arms from his elbows down, but here I came walking in with my legs, arms and fingers fully intact," Crawford said.

"That guy on the table was playing catch with his son, and I thought, 'God, I have it easy.'"

Crawford wouldn't trade his military experiences, stating he would "rewind and do it in a heartbeat." His unflinching devotion is due to his great appreciation for the U.S. Army.

"My family understands what I was doing and the reasons why," he said. "They knew if Dad wasn't coming home, it was for a good cause," he said.

"I want my kids to be able to walk freely down the street or go to a ball game without worrying about getting hit."

**"People" From Page 41**

service hiring authority for spouses of employees affected by BRAC. Also in the works are placement agreements with other BRAC-affected activities at Aberdeen Proving Ground, such as the Ordnance Center and School and the Chemical Materials Agency to help ease their drawdowns.

There is also a reassignment job placement program for spouses within the Team C4ISR workforce who are moving to different BRAC locations and for Fort Monmouth Garrison employees with no Transfer of Function entitlements. In all things, the focus is on taking care of people and their families.

**The Recruiters' Perspective**

At career fairs, the Army Team C4ISR booth is getting a bit more

crowded these days. "We have a much greater presence on college campuses. Now there is brand recognition. People know Army Team C4ISR. They may not know what it stands for, but they know we're with the government, and we're related to BRAC somehow. We have more job categories than other agencies, and are often a lot more competitive. Business students used to think they would work for a Fortune 500 company out of college, but the whole mindset is changing. Government and non-profits are more appealing, and students are now researching government opportunities," said Newton.

**Getting New Hires up to Speed, Retaining Skills**

The Human Resources De-

velopment Division (HRDD) from the CECOM LCMC G1 plans to begin shifting some training to APG in 2009, including new employee and intern orientations, greening experiences, professional skills training courses, and some acquisition training. With many new hires at different grade levels, it is vital to get them trained as quickly and effectively as possible. "We recommend that organizations develop training roadmaps for different job functions and grades to serve as guides when developing individual development plans. The information in the roadmaps will ensure employees participate in sequential and coordinated training, which will develop the skills they need at each level of their career, as well as pre-

pare them for future assignments," explained Maria Layton, Chief, G1 HRDD.

**Making the C4ISR Center of Excellence a Reality**

All of these efforts support Army Team C4ISR's goal of ensuring its world-class support to the Warfighter continues without disruption during the BRAC transition.

By focusing its efforts on retaining as many of its expert and experienced personnel as possible and encouraging their relocation to APG, as well as hiring the best candidates for available jobs, Army Team C4ISR will continue its outstanding legacy of support to the Warfighter at its new Center of Excellence at Aberdeen Proving Ground.

**"Split" From Page 43**

anticipated to be at APG by the end of fiscal year 2009, Mr. Sharman's new role will be a critical component of our split-base operations there."

Regarding his selection, Sharman said, "I look forward to this new opportunity and the challenges it presents, and we are committed to building a solid foundation for the future command that will stand the test of time."

Reconstituting the Army Team C4ISR mission will require preparation for the transition and eventual

relocation to the new campus, mission continuity, and operational oversight at APG.

Sharman explained split-base operations as doing business in two geographic locations where people have roles and responsibilities not defined geographically, adding "the customer's experience should be seamless." Sharman also said "his role at APG will be to seamlessly integrate APG-Forward C4ISR operations with Fort Monmouth's to build the future foundation for the

command and set the conditions for successful relocation."

He will work closely with Edward C. Thomas, the deputy to the CECOM LCMC Commanding General, in conducting and executing split-base operations for the command at APG.

Thomas will continue his overall global operational oversight of the CECOM LCMC from Fort Monmouth until his transition to APG.

In the near-term, together with Sharman, he will work to assure

that C4ISR functions and personnel transition seamlessly from Fort Monmouth to APG.

Sharman will also work closely with Owens, deputy commander - APG Forward, who will continue his role of taking care of people, providing new employee orientation, and assisting with the in-processing of new or relocating personnel. "I look forward to continuing my exceptional working relationship with both Mr. Thomas and Col. Owens," Sharman said.

**Early Mover: Linda Chapurinov jumps at chance for adventure**

**By Andricka Thomas**  
*Forward Correspondent*

"I jumped at the chance to start a new adventure," said Linda Chapurinov, logistics specialist with CECOM Life Cycle Management Command G4. She reported to her new position at Aberdeen Proving Ground in August and hasn't looked back since.

"I was excited to go into the unknown," said Chapurinov. "I like a challenge." Chapurinov was afforded the opportunity to learn a new discipline in her new position, so not only was she moving to a new state, but stepping into a new job as well.

A former member of the Women's Army Corps, Chapurinov and her husband, Peter, are proud parents of two children, both of whom serve in the military. Now that her husband is retired, she said she had some flexibility in her choice to move. "Change is a constant in life," according to Chapurinov, "Why not embrace it?"

Chapurinov used to work in the Fort Meade area in Maryland, so she was somewhat familiar with the Baltimore area. "In comparison to New Jersey, this area is quite affordable," she said. She sold her home in Howell and chose to purchase a home in Cecil County, Md.

"I love Cecil County," she

said. "I did a lot of research before I moved." She said visiting the area was helpful in determining where she wanted to live. Chapurinov made multiple visits before deciding where her and her husband would settle.

"You have to visit and see what the areas are like for yourself," she said. "Once I visited, the unknown wasn't so unknown." Chapurinov said speaking with co-workers who had already made the move was helpful. She recommends that co-workers who are contemplating the move should contact the G1.

"G1 was great. Someone was always on the other end of

the phone ready and willing to answer any questions I had," said Chapurinov. "I had no problems with transportation; the entire process went smoothly."

Advice: "Examine your needs before you move. Ask yourself if the move is right for you, be open to change and tap into your resources. There are people here who don't mind sharing their experiences so others may benefit. Take the time to research the different areas for specific school information and other things that interest you. Visit! It will help you get comfortable with the new area. If the move is right for your family, you'll know it."



# Recruiting like it's going out of style

By Scott Kelly and Julie Carter  
Logistics and Readiness Center

Since June 2008, the Logistics and Readiness Center, CECOM Life Cycle Management Command, has proactively executed a targeted recruiting effort to identify qualified, top performers to build a journeymen workforce.

Management turnover, leadership succession, and the impact of Base Realignment and Closure Law means the need for talent couldn't be greater.

In order to meet current and future LRC requirements, innovative methods were created to recruit and process high quality candidates. While the LRC continues to use traditional methods such as Civilian Personnel On-Line (CPOL) and USAJOBS websites, participation in job and career fairs, and select advertisements, it is current and former employees, friends and social networks that have been one of the most valuable and effective resources.

The LRC has also trained recruitment representatives to participate in recruiting events throughout the country. These representatives provide brief overviews of the LRC mission and suggest employment opportunities to prospective candidates.

During these events, the CECOM LCMC Command video is played to show the magnitude and impact of our mission supporting the Warfighter.

These representatives also participate in local agency information seminars, as well as Association of the United States Army (AUSA) events. Senior management has been involved in Army Career Alumni Program (ACAP) events sponsored by RecruitMilitary and MilitaryStars who recruit veterans in the Washington, D.C., Baltimore, Md. and Philadelphia, Pa. areas.

Most importantly the LRC has successfully hired Soldiers from the U.S. Army Wounded Warriors Program, which is specifically designed to assist disabled veterans in finding employment opportunities, enable career advancement and provide financial security for their families.

The LRC also supports candidates from the "Always a Soldier Program" that hires Soldiers separating from military service.

As a corporate sponsor of the Penn State, SMEAL College of Business, Center for Supply Chain Research, State College, Pa., the LRC has access to a pool of talented candidates majoring in Supply Chain Management (SCM) and Management Information Systems (MIS) fields. The LRC has participated in many Spring/Fall Supply Chain Career Fairs and Coffee House events to educate and build relationships with students



U.S. Army Photo

*Job seekers pick up flyers and brochures at the Fall Supply Chain Career Fair at the Penn State SMEAL College of Business at University Park, Pa. held in September 2008.*

seeking internship experience or permanent employment in the supply chain management fields.

Another innovation was the creation of a four member supervisor recruitment panel to serve as selecting officials for all LRC vacancies. Each member of this panel represents a Weapons System Directorate and coordinates vacancy selections with gaining activities.

During peak resume periods, the LRC quickly assembles temporary panels to assist in rating and ranking large volumes of resumes. Over the course of a year, the recruitment panel has optimized the selection procedure taking anywhere from one to three months down to 18 calendar days.

The LRC plans to continuously post various vacancy announcements on the CPOL website in 20 calendar day increments. Once the announcement closes, a referral list is issued to either the selecting official or the recruitment panel for processing within the 18 calendar day standard. If an announcement doesn't produce enough highly qualified candidates, a new announcement is reposted within 60 calendar days until the position is filled or the position is no longer required.

The LRC and Army Team C4ISR continues to accept resumes year round for two entry level programs for college students and new employees to the government, the Student Career Experience Program (SCEP) and Federal Career Intern Programs (FCIP), respectively.

SCEP employs students in occupations related to their field of study and offers noncom-

petitive conversion to career, career-conditional, or term employment upon successful completion of their academic program. It is available to all levels of students: high school, vocational and technical, associate degree, baccalaureate degree, graduate degree, and professional degree students. The SCEP is a paid intern developmental program that provides on-the-job-experience while attending school.

Students may work full-time or part-time during school breaks at an hourly wage ranging from \$12 and \$19 an hour.

The LRC has received over 1000 resumes and selected over 138 candidates in the past 12 months. All candidates that provide an e-mail address are sent a current list of open positions in the LRC and instructions to create a resume at the CPOL or USAJOBS website.

Candidates are also advised to periodically check the the U.S. Army Team C4ISR Jobs and Careers Website at [www.monmouth.army.mil/hr](http://www.monmouth.army.mil/hr) for new announcements and are requested to send a copy of their resume to [C4ISRcareers@conus.army.mil](mailto:C4ISRcareers@conus.army.mil).

While the LRC has exceeded this year's projected hiring targets for APG, recruiting efforts will continue. People provide the asymmetric advantage that will lead to success in current and future missions.

The LRC's success in these missions depends on having the agility, flexibility, and adaptability to deliver the right people with the right skills, at the right time and place.

# Achieving milestone affords aircraft protection

By Brandon Pollachek  
IEW&S Correspondent

While a Nashua, N.H. industrial plant could hardly be further from Iraq and Afghanistan, when the Army accepted the delivery of a protection system there April 30, it was a milestone of demonstrated significance for Soldiers fighting overseas.

That milestone was achieving the Acquisition Program Objective (APO) of 1,710 Common Missile Warning Systems (CMWS) approximately one year ahead of schedule at the BAE plant where CMWS is manufactured.

The rate of aircraft crashing due to enemy shoulder launched missiles decreased as quickly as the CMWS were introduced into theater in 2004, according to Product Manager for Infrared Countermeasures, LTC Raymond Pickering.

With CMWS systems now installed on almost all Army aircraft in the combat zone, pilots flying missions in Operation Enduring Freedom and Operation Iraqi Freedom have been afforded a sense of security not available to them prior to the devices' inclusion as a part of the aircraft's survivability equipment.

*A CH-47 Chinook helicopter airlifts a 155 mm howitzer onto Forward Operating Base Shank, Afghanistan, while being protected from the threat of enemy shoulder launched missiles due to the Common Missile Warning System.*

Project Director Aircraft Survivability Equipment (PD ASE) fielded the systems to aviation units on an accelerated timetable.

Following the loss of a CH-47 Chinook helicopter to an enemy missile in November 2003, then Acting Secretary of the Army, R.L. Brownlee called for a plan, "... to equip all our helicopters in

## RECEIVED One Year Early

Iraq and Afghanistan with the most effective systems we have in development or procurement."

In response to Brownlee's direction, less than a year later, the first CMWS system was installed and now pilots are provided with persistent protection from the threat of man portable air defense missiles (MANPADs), which proliferated the battlefield in the early phase of OEF and OIF.

"The Army is committed to ensuring Soldiers are fully equipped to perform their missions and have the best force protection capabilities possible," said BG Thomas Cole, Program Executive Officer Intelligence, Electronic Warfare & Sensors (PEO IEW&S). "CMWS has proven to be a game changing system allowing aircraft to move throughout theater in a much safer manner. Whether providing close air support, transporting troops or conducting medical evacuations the CMWS has improved our effectiveness in all areas."

In addition to improved safety figures, Army aviators are finding CMWS allows them to neutralize potential threats.

"The bad guys are finding out the hard way that shooting a missile at Army aircraft is a lose-lose situation for them. They have an extremely low probability of a hit, and due to the CMWS and similar systems, they also have a high probability of being detected and destroyed after the shot," said CWO (5) Pat Shores, a UH 60 pilot who flew with the 4th Infantry Division during OIF.

Plans are for the APO to be extended as requests for the systems continue to come in. The CMWS is currently in the early stages of partnering with Advanced Threat Infrared Countermeasures to continue to advance the protection envelope for Army aircraft and crews.

# Reset efficiency improves

By Jennifer Caprioli  
Tobyhanna Correspondent

TOBYHANNA ARMY DEPOT, Pa. — Improvements, initiative and teamwork help Tobyhanna personnel return AN/TRC-190 systems to Soldiers more efficiently.

Employees here have reset over 190 systems since the program began last fiscal year, and they plan to reset 100 more this year.

The AN/TRC-190 is a multi-channel radio terminal that allows point-to-point ultra high frequency radio links.

"Reset" is the refurbishment of equipment from Southwest Asia that is worn or damaged by an increased operational tempo, rough desert environments and limited maintenance available during war-time operations.

When the program began units disassembled the system into four parts -- the shelter, Humvee, antenna and generator -- and sent each part to their designated installations for reset. Last year an Army-wide change was implemented, allowing each unit to send the entire system to a central turn-in point.

In October, units began sending completed systems that needed to be reset to Tobyhanna. Technicians here dismantle the shelter from the Humvee, which is sent to Red River Army Depot, Texas, and the generator, which is sent to Lettinkenny Army Depot. The shelter and antenna from each system stay at Tobyhanna for repair.

"Although we don't work all of the components of the AN/TRC-190 systems here, we receive all of it to take the burden off of the Soldiers," explains Kris Martin, production controller for the AN/TRC-190 Reset



photo by Steve Grzedzinski

*Dave Walsh, electronics worker, operates the power control panel in the AN/TRC-190 shelter.*

program. "Instead of sending their components to multiple locations, they now only need one location, one address and one point of contact for the entire system. It's intended to be a lot easier for the unit."



# Tobyhanna hosts Lean workshop

**By Jennifer Caprioli**  
Public Affairs Office

TOBYHANNA ARMY DEPOT, Pa. — Lean practitioners from across the Department of Defense came together to share, learn and educate each other during a Continuous Process Improvement workshop, held at Tobyhanna Army Depot, April 22-23.

"This is the first of what I believe will be many types of these events," J. D. Sicilia, director of the Department of Defense's Lean Six Sigma program office, noted during his welcome speech.

The workshop, which was a chance for networking and best practice sharing, included participants from the DoD industrial base, the Defense Logistics Agency, Army Materiel Command (AMC), Navy and Air Force who have demonstrated to be "best in class."

"This is an opportunity for those who have demonstrated success and excellence in what they're doing to come together and network with others," Sicilia explained to a panel of 75 personnel.

"The objectives are pretty simple. I want you to walk away with at least one thing you've learned here so you can go back to your organization and improve it," Sicilia said.

He said the need for a workshop stems from his goal of getting the DoD to perform as an enterprise, and started looking into having the workshop about a year ago.

"We discovered that there were so many pockets of excellence in the DoD, that we're really working in isolation," he explained, adding, "you wonder if they're talking to each other. Most of the time the answer was 'no'."

The two-day workshop focused on Tobyhanna's Lean Six Sigma (LSS) achievements and lessons learned, as well as the LSS accomplishments of the other present DoD industrial facilities.

During the workshop Sicilia, touched upon the idea that in order for the DoD to become an enterprise, it must focus on four components.

Strategic alignment/project selection are the most important aspects that will "drive the biggest bang for your buck," and aligning those

aspects to the mission of the organization.

Consistency of approach, which Sicilia notes turned out to be a bigger challenge than he thought it was, focuses on combining Lean and Six Sigma methodology. "I continued to hear a separation between Lean and Six Sigma; Lean is used to eliminate non-value added steps and Six Sigma is implemented to align and separate," he explained after hearing the briefings and panel discussions.

Integration, which was the purpose of the workshop, concentrates on bringing data together, sharing information, taking and selecting lessons learned, and applying it to the organization.

"There's a lot to learn from what we did wrong and if we can share what went wrong then we can save others that dip in their performance, and help accelerate their improvement," Sicilia said.

COL Ron Alberto, depot commander, notes that the most important thing he learned at the workshop is "we don't have integration across the AMC, Army or DoD," adding that, "there's tremendous opportunity for senior leaders to try and figure out how to make this process more efficient."

The last component, human capital, consists of providing a certification and additional skill identifier to employees.

The combination of the four areas, roped together by leadership, will result in a DoD enterprise, Sicilia explained, adding that managers need to pay attention to what employees have to say because empowerment will increase productivity.

"Let them [employees] drive the car, just keep them out of the ditch," Kenneth Brumley told attendees during his brief. He is the director of Red River Army Depot's Office of Enterprise Excellence.

A promising outcome of the workshop is an enterprise-wide project that involves depots coming together to solve common issues, such as improving a painting process.

Sicilia also plans for organizing more workshops but is uncertain of the frequency.

"Having a workshop annually is too far away but quarterly may be too often. We hope to get input from the workshop's participants."



***"This is an opportunity for those who have demonstrated success and excellence in what they're doing to come together and network with others."***

*J.D. Sicilia speaks to workshop participants on the importance of Lean Six Sigma.*

Photos by Tony Medici



# Software center upgrades intel craft

## Improvements to Guardrail improve intelligence support and deployability

By Eddy Hitti

Receiving signals intelligence (SIGINT) and targeting information in as close to real time as possible are essential factors in enabling information dominance and force superiority on the battlefield. Modernizing the Guardrail Common Sensor (GR/CS) system is a critical aspect of equipping Warfighters with the capabilities they need to overwhelm enemy forces in theater. The CECOM Life Cycle Management Command's Software Engineering Center (SEC) plays a key role in modernizing and enhancing Guardrail, among the most advanced and accurate SIGINT platforms in operation.

The Guardrail system uses remotely controlled, fixed-wing RC-12 aircraft to intercept, identify, classify and determine the source and location of hostile communications and radio signals. The typical Guardrail system deployed to a battalion includes eight-to-12 aircraft that fly operational missions in sets of two or three.

The aircraft, which contain specialized electronics packages, simultaneously collect emitter transmissions with time and location data, and then transmit that data via satellite to an integrated processing facility (IPF) ground station in a secure area in the U.S., Germany or Korea. The raw data is then processed into actionable intelligence, which is then sent back via satellite through either the aircraft or a remote relay facility, ultimately reaching a tactical operations center for use in targeting and battle command decisions.

SEC personnel involved with Guardrail modernization have made invaluable contributions to the Army's strategic imperatives to prepare, reset, transform and sustain Warfighters and the resources that support them and their missions.

Most recently, during a Guardrail unit's reset period at Fort Hood, Texas, SEC staff meticulously documented and analyzed all of the software trouble reports recorded during

the unit's deployment to Iraq. During the reset operation, the SEC team implemented important systems enhancements, including:

- ◆ Increasing mission-operation communications capabilities between airborne relay facilities and ground stations by improving related software stability and performance.
- ◆ Developing an easy-to-use "knowledge data base" tool that greatly simplified the process used by Guardrail personnel to identify defective line-replaceable units (LRUs). LRUs are complex components housed in "black boxes" designed to be easily and quickly replaced using simple connections.
- ◆ Reducing pre-flight checklist times by improving pre-mission processes.
- ◆ Dramatically accelerating the post-operation evaluation process,

reducing a three-to-four hour process to approximately 30 minutes.

In addition to supporting the airborne platform and the IPF ground systems software, SEC personnel provide systems integration support to reduce Guardrail's massive hardware footprint. The multiple large IPF trailers previously required are being replaced by streamlined and standardized Guardrail Ground Baseline (GGB) components that also feature improved SIGINT capabilities.

As a result, Guardrail units are able to deploy their aircraft without having to deploy extensive ground station components unrelated to their mission. The new GGBs also represent an important step in transitioning these components into the Distributed Common Ground System - Army, establishing a net-centric architecture for collaborative intelligence operations.

The Army's four Guardrail systems, which are all in the process of migrating to a common software and hardware baseline, are oper-

ated by Military Intelligence Battalions under the direction of the U.S. Army Intelligence and Security Command.

◆ 15th Military Intelligence Battalion – III Corps, Fort Hood Texas – deployed in support of OIF.

◆ 1st Military Intelligence Battalion – V Corps, Wiesbaden Germany – deployed in support of OIF and Operation Enduring Freedom.

◆ 224th Military Intelligence Battalion – XVIII Corps, Hunter Army Airfield, Savannah Ga. – deployed in support of Operation Iraqi Freedom.

◆ 3rd Military Intelligence Battalion – 501st MI Brigade, Pyongtaek, Republic of Korea.

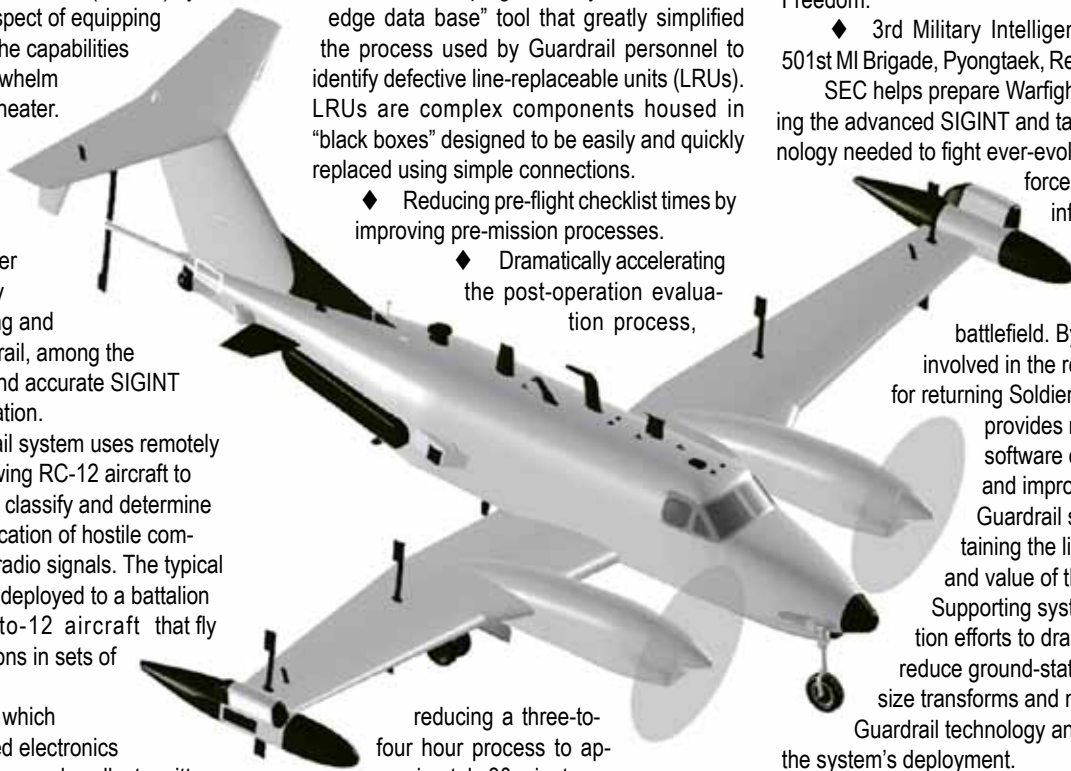
SEC helps prepare Warfighters by delivering the advanced SIGINT and targeting technology needed to fight ever-evolving enemy

forces, ensuring information dominance and superiority on the battlefield. By being actively involved in the reset process for returning Soldiers, the SEC provides numerous software enhancements and improvements in the Guardrail system, sustaining the life expectancy and value of the system. Supporting system integration efforts to dramatically reduce ground-station footprint size transforms and modernizes Guardrail technology and streamlines the system's deployment.

The Army's prepare, reset, transform and sustain framework is designed to restore the balance between the demands placed on Warfighters. The SEC contributions to the Guardrail system demonstrate SEC involvement in key aspects of these strategic Army initiatives.

### ABOUT THE AUTHOR

Eddy Hitti is the Director for Intelligence, Surveillance, Reconnaissance Software at the Software Engineering Center, CECOM. He holds a Master of Science in Software Engineering from Monmouth University, a Master of Science in Electrical Engineering from Southern Illinois University Edwardsville and a Bachelor of Science in Computer Engineering from the University of Illinois at Urbana-Champaign. He is certified at Level III in Systems Planning, Research, Development and Engineering.





## Spectra People Power Focus: Jeff Moreno

# Tech protection is key to system superiority

By Brandon Pollachek  
PEO IEW&S PAO

Providing Soldiers with the best equipment available is essential to their success on the battlefield. Many of the systems fielded by Program Executive Office, Intelligence, Electronic Warfare & Sensors (PEO IEW&S) offer Soldiers cutting edge technology for the gamut of their Intelligence, Surveillance and Reconnaissance needs and of course, if America's enemies were to find out what makes these systems tick, they could be rendered ineffectual and put Soldiers in harm's way.

That is where the Army Research Technology Protection Center (ARTPC) and its technology protection engineers (TPEs) come into play. The ARTPC was created in October 2002 to fill a void in the realm of program protection.

Following a survey, directed by former Army Chief of Staff GEN Eric Shinseki, to determine how program protection was being performed in the Army, the determination was made to create an organization charged with standardizing program protection across the service.

"Based on the findings from the survey, we learned there were islands of information in regard to how different organizations viewed and implemented program protection for their systems," said Jeff Moreno, PEO IEW&S TPE.

In 2003, PEO IEW&S became the first organization to bring a TPE on staff. The role of the TPE is to advise the PEO on the status of program protection for the more than 60 systems within the organization's inventory. Via a semi-annual program protection status update to the PEO, the TPE captures the number of programs within IEW&S, how many of these programs have been assessed for critical protection information (CPI); and for those programs that have CPI, supports and monitors development of program protection plans. Once the Milestone Decision Authority approves a program protection plan, the TPE coordinates with the Army Counter Intelligence Organization to validate and assess the effectiveness of the countermeasures implemented at the various locations.

"The technology protection program is equally as important as the systems it protects," said Dr. Richard Wittstruck, PEO IEW&S chief systems engineer. "Without the countermeasures the PMs, TPEs, and contractors collectively put in place, some leading

*"We **identify** the technical know-how . . . that enables the U.S. to have a **combat** or competitive advantage."*

*-- Jeff Moreno*



Photo by Mike Berry

edge technologies could be compromised by a cunning and technologically savvy enemy and deny our soldiers their combat advantage on the battlefield."

Prior to a program reaching Milestone A, the program protection team usually becomes involved in reviewing the Request for Proposal (RFP) and stipulating Program Protection Contract Language be included in the RFP and subsequent contract award.

The stipulation obligates prime and subcontractors to support the program protection team in conducting a CPI Assessment. If CPI is identified, the program protection team would execute the remaining program protection planning process: identify threats to CPI, identify vulnerabilities, conduct risk analysis, and develop countermeasures. In essence, implementing the program protection planning process early in acquisition or Research, Development and Engineering allows for an increased level of protection.

"A CPI assessment entails the program manager convening an IPT (integrated product team) made up of a combination of government and contractor subject matter experts that are charged with developing the technology," said Moreno.

"We also have representation from ARTPC with at least two TPEs that participate to facilitate and apply the Army G2 methodology for program protection. We have support from Army Counterintelligence Agents, National Ground Intelligence

Center (NGIC) Analysts, Army Counterintelligence Center (ACIC) analysts and the PM leadership.

The IPT team conducts an engineering analysis focusing on six areas: Concept, Material, Design, Manufacturing, Integration, and Operational.

"The system is presented to the group, we decompose it, going from system to sub-system to components and then we try to identify the sub-systems or components that provide unique capabilities and provide a military, economic, or political advantage," notes Moreno. "We identify the technical know-how in one of the six areas that contributes to the system's capability that enables the U.S. to have a combat or competitive advantage."

Once the team completes its study of the system the information is run through an automated CPI Tool, based on the DoD Instruction 5200.39, and sanctioned by Headquarters Department on the Army G2. If it is determined that CPI is present a Program Protection Plan is developed.

In creating a Program Protection Plan, a five-step process is put into place to safeguard the system, based on information collected during the course of the CPI assessment.

The five-step process is as follows: 1. An engineering analysis that identifies the CPI. 2. A threat assessment, which is the multi-discipline counter-intelligence threat assessment that is developed by Army Counter Intelligence in conjunction with the National Ground Intelligence Center. 3. A vulnerability analysis starts figuring out what are the exploitable weaknesses. 4. A risk analysis, which looks at cause versus rewards. How much is the PM willing to spend in order to eliminate certain countermeasures and what are the rewards of implementing those countermeasures? 5. Implementation of countermeasures. "When we talk about countermeasures, there are basically three categories: security disciplines such as physical security, information security, communication security, operational security, automated information systems security, and industrial security; counterintelligence, and anti-tamper (when applicable)" notes Moreno. "By having TPEs assigned to PEOs, we have prevented the potential theft of a lot of our leading edge technologies because PEOs are now more aware of program protection requirements and vigilant in governing the execution of the program protection planning process," said Moreno.

# Are you thinking what I'm thinking?

## Labs set on 'cognitive radio' technology for Warfighter support

**By Sharon Rushen**  
CERDEC Public Affairs & Outreach

Radios have been a vital military technology since World War I. Advancing radio technology can provide quicker, more efficient communication in the field. Therefore, CERDEC technologists are developing a more intuitive device known as cognitive radio that will help prevent interference and provide a safe means of communication for the Warfighter.

In hostile environments, Soldiers are faced with difficult radio communication because of limited frequencies - many of which are jammed, compromising prompt and safe communication.

Cognitive radio is a form of wireless communication that allows transceivers to intelligently detect communication channels that are in use. By identifying these channels, the devices can make an immediate transition to vacant channels while avoiding occupied ones,

thus aiding the Warfighter in finding accessible frequencies.

Cognitive radios can also be netted together to form cognitive networks that will provide better communication performance to the Warfighter with reduced Soldier intervention.

"Cognitive radio gives the radio enough intelligence to make its own decisions so that the user doesn't have to pick frequencies or plan a network. The first step is to enable them to actively find out their frequencies instead of telling the radios you can only use frequencies x, y and z. We're now saying you can use any frequencies you want except for 1, 2 or 3; it's more of an exclusion list," said Tim Leising, CERDEC electrical engineer. "Basically, the radio will change how it works to enable better communications for the Warfighter."

Cognitive radio may be viewed as the next generation of software-defined radio (SDR). SDR software can mimic the functionality of older radio types or add new functionality, but cognitive radio will add intelligence to that functionality and capability.

"Because radios have been traditionally implemented in hardware, you've got AM

radios, FM radios and VHF radios- that radio; that's all they can do. You can't change an AM radio to an FM radio. But what software-defined radio has done is extract the personality of the radio (AM, FM, VHF), and the software defines the personality. In a software-defined radio, the radio is the software, and the hardware is just the platform," said Jack Ruroede, branch chief of CERDEC's Ground Mobile Radio branch.

Since the summer of 2007, the Space & Terrestrial Communications Directorate SDR lab has been researching and developing cognitive radio. Its introduction to cognitive radio came from the first Department of Defense (DoD) implementation of the technology by the Defense Advanced Research Projects Agency (DARPA) and its Next Generation program.

"DARPA did a lot of research. They actually proved out some of these concepts where they had the software radio actively scanning different frequencies and finding what's occupied and not and acting upon that by using those frequencies," said Leising, lab team lead of CERDEC's SDR lab. "Our role is transitioning it into an actual product."

To reach this goal, the SDR lab has teamed up with the S&TCD Spectrum Analysis Division and the Network Sciences & Design Branch, to implement a lab that is accessible to all engineers and scientists working on the effort.

With these efforts, additional research and partnerships with academia and industry, cognitive radio has taken the forefront for the SDR lab team.

Sagor Hoque, electrical engineer in the SDR lab, was awarded a research grant from S&TCD in February 2008 to develop a cognitive reasoner, software that identifies which radio frequency may be occupied. During Hoque's six-month grant, he researched industry and academia to see what had been done in cognitive radio.

This led the way for a collaborative partnership this year with Virginia Polytechnic Institute and State University (Virginia Tech) to further develop a cognitive reasoner.

"We want to develop something that can work on a small-scale platform with very limited software resources. The plan is to demonstrate that on a small-scale software-defined radio, and we hope to do that by the end of the year," Hoque said.

The SDR lab is also working with the Office of the Secretary of Defense to mature the technology and conduct additional research.



Photo by Jack Ruroede

David Davis (left) and Alexander Pavlotskiy, of the Space & Terrestrial Communications Directorate, in the Software-Defined Radio lab.

See "Radio" Page 58





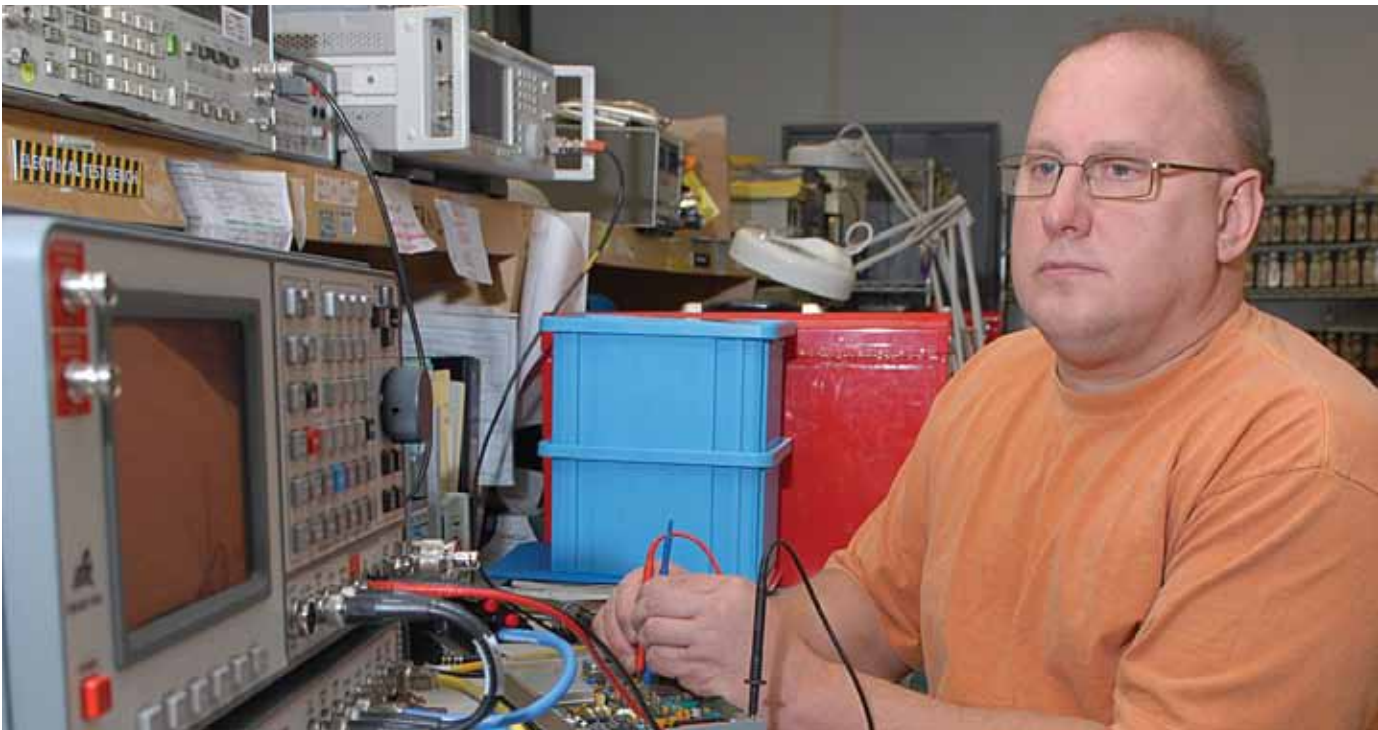


Photo by Steve Grzedzinski

*Anthony Drozdis, an electronics mechanic at Tobyhanna Army Depot, aligns the tuner section of the ARN-149 Automatic Direction Finder using the AN/GRM-122 test set. The three-part test set replaces up to seven pieces of test equipment, some of which can be seen on the shelf above the GRM-122.*

## Modern set replaces old equipment

**By Jennifer Caprioli**  
Public Affairs Office

TOBYHANNA ARMY DEPOT, Pa. — A modernized, automatic test set replaces seven pieces of manual equipment which are used for testing radio systems here.

The AN/GRM-122 radio test set, in use since December, is used by technicians in the Navigation Systems Branch to test the AN/ARN-89, -149 and -123 radio systems. The branch is part of the Command, Control and Computers/Avionics Directorate's Avionics Division.

The \$100,000, three-part stackable test set is capable of replacing three different types of manual test sets, says Anthony Gentle, branch chief. The manual test sets contain up to seven pieces of equipment, including generators, meters and scopes, some of which are becoming obsolete.

Branch personnel are replacing eight manual test sets with eight GRM-122 units, which is part of the Depot Maintenance of the Future program.

"It's a self-contained system, which is better than having pieces of equipment all over the place," explains Jeffrey Tavella, noting that it contains equipment such as a built-in

scope and spectrum analyzer. Tavella is an electronics mechanic in the branch and tests the ARN-123.

Branch personnel recognized the potential of the new technology for test purposes here after learning U.S. Army CECOM Life Cycle Management Command was fielding the test sets to intermediate maintenance facilities, Gentle explains. He adds that technicians looked forward to using the new equipment after watching a demo test performed on an ARN-149 here.

"They [branch technicians] have embraced the new test system," notes Gentle. "They like the fact that it's compact and automated." Tavella adds that by implementing the new system, technicians have been able to free-up space on the benches, allowing them to perform component replacement on the same bench as the radio testing, and it creates a cleaner-looking environment.

"The nice thing about it is that [when setting up for tests] you hook-up a piece of equipment and it goes through each test," notes Tavella. "And it sets up another test [on the same piece of equipment] automatically."

"There's a potential for time savings because the system automatically goes through all of the tests," explains Thomas Yanochko,

but notes that because the system is still new they haven't been able to determine any savings yet. He is an electronics worker in the branch and participates in the Student Career Experience Program (SCEP).

Yanochko says the graphics are better on the GRM-122 and that there's a lot less hands-on when using the test set because a technician presses a button and monitors the tests. He adds that "it's more user friendly, making it a very useful device." The new test set is similar to the type of equipment he learned to use while studying electronics technology at Lackawanna College.

Future plans include troubleshooting the radio systems using the GRM-122, and learning the extent of the functions from a company representative, Gentle notes. Also, technicians are running comparison tests between old and new test systems and plan on providing suggestions to software designers for possible software changes.

The ARN-89 Direction Finder Set is a navigation guiding receiver, and the ARN-149 Automatic Direction Finder System indicates bearing information to the transmitting station being received. The ARN-123 Radio Receiving Set is a very high frequency Omni range and instrument landing system.

# C4ISR NEWS Gear in place for Afghanistan surge

*Team provides strategic communications equipment in Afghanistan in time for Obama's decision for U.S. ramp-up*

**By Delle C. Lambert**  
USAISEC Correspondent

FORT HUACHUCA, Ariz. – In a February 17, press release from the White House, President Barack Obama made a commitment to send additional troops to Afghanistan. He stated that the “increase is necessary to stabilize a deteriorating situation in Afghanistan...”

Initially, it was thought as many as 30,000 additional troops might be deployed to Afghanistan – two or three brigades' worth. Whatever the final number turns out to be, Warfighters will benefit from enhanced Command, Control, Communications and Computers (C4) capabilities, thanks to strategic communications infrastructure provided at the International Security Assistance Force (ISAF) Headquarters in Kabul by the Product Manager, Defense Wide Transmission Systems (PM DWTS), part of the Defense Communications and Army Transmission Systems (DCATS) Project Office of the Program Executive Office, Enterprise Information Systems (PEO EIS).

U.S. Army Information Systems Engineering Command (USAISEC) provided independent Government engineering validation to PM DWTS for their contract integrators. They reviewed designs and workmanship; provided high level System Designs and Conceptual Designs, performed Engineering Validation/Quality Control (QC) and performed Systems Acceptance Tests of C4 systems, and other critical C4 infrastructure being implemented in theater. USAISEC engineered to industry and military standards and provided Quality Assurance (QA) and QC of applicable standards during the engineering, construction, and integration phases of this project.

According to Bryan Kleese, Team Lead, his team of engineers and senior technicians provided matrix support to the ISAF Headquarters' project and supported the project leaders from PM DWTS. The team received engineering and technical support from Telecommunications Specialist Joe Medarac, and C. C. Caywood, an electrician engineer, subject matter expert for power and grounding. The USAISEC Team also regularly coordinated with the engineering team supporting PM Defense Communications Systems - Southwest Asia, which is PM DWTS's sister PM that provides Data and Voice systems engineering for



U.S. Army Photos

*Hardware is unloaded and installed at the International Security Assistance Force Technical Control Facility at Kabul, Afghanistan, June.*

post, camps, and stations. The PM Defense Communications Systems - Southwest Asia engineers coordinated with Jose Olivares (Data Systems Engineering); Robert Mayfield (Outside Plant Engineering); and Randy Kuhn (Voice Systems Engineering).

David Short is the current USAISEC project leader/field engineer supporting Kleese on the ground in Afghanistan. Short has been deployed in Kabul since January 2009. He is scheduled to remain in theater for a period of six months. Short has been conducting numerous site surveys in Afghanistan to prepare for establishing Command, Control, Communications and Computers facilities in support of the anticipated influx of Soldiers. Larry Woodhall has been appointed as the project leader/field engineer supporting Kleese in Kuwait. He is currently going through the process of initiating a follow-on contract to provide on-site engineering support to the PM in Kuwait.

At ISAF Headquarters, PM DWTS' Afghanistan Team, transformed an Area Distribution Node (ADN) into a full-blown Technical Control Facility (TCF) that supports thousands of Warfighters. The team was given only six months to complete the project, which started in January 2008, and was required by no later than June 31, 2008.

The installation of all TCF systems inside the C4 building was completed by June 31, 2008 on schedule. USAISEC assisted the Operations and Maintenance (O&M) Command in cutting over all circuits from the old TCF on ISAF to the new TCF on ISAF in July and August 2008.

The microwave (MW) radio systems were installed on the tower at ISAF Headquarters (HQs) in August 2008 for an anticipated link

between ISAF HQs and the New Kabul Compound (NKC) Main Communications Facility (MCF). USAISEC had to make adjustments to the height of the towers at the ISAF in February after the radio link was established between the ISAF and NKC because an obstacle was installed on top of a building between the two sites interfering with the Line of Site. The testing for the radio link after adjusting the antenna heights was completed in March.

PM Defense Communications Systems Southwest Asia is currently in the process of delivering the Top Level Architecture (TLA) stack in the second floor of this facility. The Deployed KU-Band Earth Terminal was installed and tested in October 2008; however, the circuits cannot be cutover to the ISAF Headquarters Technical Control Facility until the TLA has been accepted and an Interim Approval to Operate has been completed by the Operations and Maintenance Command.

When the NKC data and voice services and the TLA for the ISAF HQ TCF are completed, the commands in Kabul, Afghanistan will have a robust network with which to distribute their local area data and voice traffic.

The TCFs at both ISAF and NKC are equipped with wide area switches that provide transmission switching for the inter and intra theater satellite architecture; they also provide an Asynchronous Transfer Mode (ATM) switching capability for a new Metropolitan Area Network, which utilizes both Optical Carrier Level 3 Microwave radio transmission and fiber transmission systems. Network bandwidth between each camp in Kabul will be increased by over five times its current capabilities, increasing the speed and reliability of communications for the commands and Warfighters within Kabul.





U.S. Army Photo

*Soldiers from the 10th Mountain Division receive instruction on the Standard Army Ammunition System-Modernization, a logistics program that enables them to sustain fellow Soldiers in garrison and overseas.*

## Logistics transition a homecoming

**By Tim Dzyacky**  
*SEC Correspondent*

FORT LEE, Va. — It will be a bit of a homecoming when sustainment and system management responsibilities for one of the Department of Defense's primary logistics information systems transfer this fall from an Army systems acquisition organization to one dedicated to life cycle sustainment.

The system, the Standard Army Management Information System (STAMIS) will transfer from Project Manager Logistics Information Systems (PM LIS) to the CECOM Life Cycle Management Command Software Engineering Center, Fort Lee, (SEC-Lee), where support for STAMIS dates back to 1974.

The transition plan calls for completion in two phases, the second of which is scheduled to be completed in October.

"The entire SEC-Lee force is ecstatic about the STAMIS sustainment mission," said Gary Lichvar, business mission area director, SEC.

"They feel that the systems have gone full circle and are now returning home. In many cases the original functional and technical personnel still work on the system today, so there is a unique bond among the systems, the personnel and the Soldiers they support," said Lichvar.

The key factors in the decision to transfer were gaining efficiencies for contracting efforts, testing facilities, information assurance, and Customer Assistance Office support. The

change also allows the Program Executive Office for Enterprise Information Systems to focus its resources on future systems such as the Global Combat Support System-Army (GCSS-Army) while major elements of the Integrated Logistics Support (ILS) acquisition for GCSS-Army require immediate attention.

The Army's logistics information systems are essential to increasing combat effectiveness. They play a vital, time-sensitive role in managing supplies, equipment, maintenance and ammunition, enabling rapid reallocation of resources to sustain troops in peace and war.

Coordination and staffing for the transition plan was extensive.

The plan was approved in December after coordination among Program Executive Office Enterprise Information Systems (PEO EIS), Army G4, Army Materiel Command (AMC), and the Combined Arms Support Command (CASCOM). After the plan was coordinated, it was signed by PEO EIS Director, Gary Winkler and SEC Director, Nelson Keeler.

Phase I, which was completed in January, transferred operational control of the Standard Army Retail Supply System (SARSS) family (SARSS-1, SARSS 2AC/B, SARSS-Gateway, and SARSS-CTASC II), the Standard Army Maintenance System (SAMS) family (SAMS-1, SAMS-2, and SAMS-I/TDA), the Unit Level Logistics System (ULLS) family (ULLS-G and ULLS-A), and the Standard Army Ammunition System-Modernization (SAAS-MOD).

Phase II will transfer full sustainment management responsibility for the Property

Book Unit Supply Enhanced (PBUSE), Standard Army Maintenance System Enhanced (SAMS-E), Standard Army Maintenance System Installation Enhanced (SAMS-IE), Financial Management Tactical Platform (FMTP), and the Unit Level Logistics System-Aviation Enhanced (ULLS-AE).

Additionally, management of the Software Integration Lab (SIL) located at Fort Hood, Texas, and the Systems Integration Facility (SIF) in Chester, Va., will transfer to SEC-Lee.

The SIL is the integration test center for PEO EIS Logistics systems, and SEC-Lee is working with CASCOM to expand the SIL to encompass integration testing of all Army Automated Logistics Systems under the Federated Labs operations at Fort Lee.

"SEC-Lee supports both the Department of Defense and the Department of the Army operating agencies and program executive offices," said Ricky Daniels, SEC-Lee director.

"We manage the functional and technical definition, design, development, testing, training, extension, and support of assigned STAMIS, Automation Information Systems and automation projects throughout all phases of the automation life cycle," said Daniels.

"Logistics information technology enables the asset visibility that provides the Army with more timely, accurate, and decisive decision-making capabilities," said Daniels. "Our vision is to be the leading software center of excellence dedicated to satisfying our customers with quality information systems, services, and products."

# Command Post of the Future is now

By Amy Walker  
C3T Correspondent

With nearly 6,000 systems currently fielded, Command Post of the Future empowers Warfighters to visualize the battlespace and synchronize the elements of combat power while simultaneously collaborating and sharing data in near-real time.

It enables users to see and interact with another's workspace, tools, data, and maps as if they were interacting with their own

workspace. CPOF received the 2009 Network Centric Warfare Award for Outstanding U.S. Government Program.

"The ability to have immediate situational awareness of activities occurring in the battlespace, regardless of geographic location, is a very powerful tool," said LTC Richard Hornstein, Product Manager for Tactical Battle Command.

When a Significant Activity (SigAct), such as an IED occurs in theater, a patrol can send the information through an FM radio to a division operations center where

it can be posted onto CPOF's Common Operational Picture, Hornstein said. Instantly, that information is available to each individual in the battlespace viewing the same digital map display.

With near real-time awareness of SigActs, units in the vicinity can either move in to provide support or they can steer away to avoid danger, Hornstein said.

In geographically dispersed locations such as Iraq and Afghanistan, CPOF allows commanders to provide updates to either subordinates or superior commanders

on a regular basis through battle update assessments.

They can also communicate, collaborate and brief each other without leaving their tactical operation centers. This keeps commanders off of the roads and allows them to provide information on daily activities at the tactical and strategic levels, Hornstein said.

Paired with Voice over Internet Protocol, which enables the user to make and receive telephone calls using a broadband Internet connection, CPOF possesses a potent combination of shared information and voice communication that allows its users to rapidly process, prioritize and respond in an effective manner.

CPOF can be compared to a modern day instant messenger, said 1LT Sean Calleja, a CPOF operator from the 3/17th Field Artillery, Fort Lewis, Wash. Soldiers can get instant feedback, and hook up headphones to speak directly to a brigade. However, the preferred method is through the chat capability, which prevents people from talking over one another. "As a CPOF operator, essentially you are going to save lives, because you are a resource manager," Calleja said. "You're managing all of the resources from brigade and all of the things that you need to request, such as close air support."



U.S. Army Photo

*LTC Gregory Coile, previously of the U.S. Army Project Management Office for Battle Command, conducts an operational vignette in a demonstration of CPOF's battle command and communications capabilities at Fort Monmouth in March of 2007. Coile is currently Executive Officer for Program Executive Office Command, Control and Communications-Tactical.*

## "Radio," From Previous Page

"We're developing some of the software on the software-defined radios that we have in the lab to enable future cognitive radio components," Leising said.

Rather than creating radio prototypes, the SDR lab is focusing its efforts on defining the small pieces of software in its existing SDRs. The goal, according to Ruroede, is to create a cognitive network, allowing tens or hundreds of radios on separate networks to coordinate and jump on the same frequency.

"When you've got 10 radios on our network, 10 radios on their network and 10 radios on another network, how does everyone coordinate this jump so that we don't have three networks trying to get to the same thing?" Ruroede said. "We're

looking into not only cognitive radio but cognitive networking: how a bunch of these radios out in the field are going to work - together and in their separate enclaves."

The SDR lab has made a lot of progress with cognitive radio research, but Leising estimates a prototype is about five or six years away.

"As we continue our research, we're going to actually start to enhance our current SDRs with new hardware or new software to make them more powerful, more capable for future cognitive radio," Leising said.

"We have folks looking at the actual networking software. I believe by 2015, the CERDEC as a whole will be actually demonstrating a prototype of this, running all the different

cognitive radios talking to each other."

The CERDEC S&TCD is formulating a Cognitive Networking R&D program for the next generation of cognitive software for cognitive radios.

Dr. Charles Graff, a senior engineer at S&TCD, said this effort will address the cognitive decision making for these radios in the Army's large-scale, mobile, ad hoc network environment.

According to Graff, the SDR concept has been around since the late 1980s, but it is only now that the advances in computer hardware and micro-electronics have made cognitive radio and cognitive networking possible for Army applications.





Photo by Steve Grzedzinski

*Tobyhanna Army Depot employees assemble, fabricate and ship thousands of CREW antenna system flex-mount devices for use in Southwest Asia.*

# Depot produces over 12k antenna flex-mount devices for Army, Navy

**By Jacqueline Boucher**  
Public Affairs Office

TOBYHANNA ARMY DEPOT, Pa. — Dozens of employees at Tobyhanna have teamed up to fabricate, assemble and ship 12,500 retrofitted and new antenna flex-mount devices to Army and Navy units serving in Southwest Asia.

Last year, the depot joined forces with the Product Manager (PM) Counter Radio Controlled Improvised Explosive Device Electronic Warfare (CREW) antenna systems, Fort Monmouth, N.J., to install a pull-down kit assembly on 5,000 devices, and then redesign and fabricate 7,500 new devices.

"Initially, we worked with a vendor to produce the retrofitted devices," said David Marcus, logistics management specialist, explaining that the vendor provided the flex-mount and employees here produced and attached the pull-down assembly. "For the new design, we integrated the flex-mount and pull-down assembly into one piece that's manufactured at Tobyhanna." Marcus is assigned to the Production Management Directorate.

Radio controlled improvised explosive devices (RCIEDs) are a common threat to lives in deployed locations. The CREW antenna system is designed to jam communication signals between the remote control and the receiver used to detonate improvised explosive devices.

The pull-down assemblies are used to protect the antennas from being damaged while Soldiers traverse the war zone in military vehicles.

"These are the hottest things going out right now," said Tim Knabel, mechanical engineer, Production Engineering (PE) Directorate. "There's a need for these devices overseas, so we're shipping them as fast as we can."

Manufacturing cost for each flex mount is less than \$500.

Before work on the flex mounts began, PM CREW representatives approached the depot with an idea to develop an internal device that Soldiers could use to pull down the antenna. The pull-down assembly allows the antenna to tilt down prior to coming into contact with a hard object such as an overpass, bridge or low-hanging wires.

"They came to us with their design," Knabel said. "The flex mount was an existing piece of equipment, but they wanted to be able to manually pull down the antenna from inside the vehicle. We worked with them to get the best solution and that's where the retrofit kit idea came from."

Today the depot fabricates all the parts from steel except the wire rope, struts and pulleys, which are purchased.

Sheet metal worker Paul Keller spends much of his time assembling the flex-mount devices that support the CREW system antennas.

"Overall it's been a very rewarding job experience knowing the troops in the field depend on these units for their survival," he said.

The large antennas that are part of the CREW system are mounted to an antenna flex mount device on a Mine Resistant Ambush Protected (MRAP) or other military vehicle. While inside the vehicle, a driver or passenger can lower the antenna by pulling a handle which is connected to a 9-foot-long wire rope (attached to each assembly).

"This has been a great project," said Tom Nawrocki, mechanical engineering technician, PE Directorate. "Everyone provided input and we got to see it go through testing."

Depot officials agree the job was a team effort. Shops including sheet metal fabrication, welding, plating, painting, fabric applications,

and sheet metal assembly played a vital role in the process.

Workers in the Assembly Branch remarked that the volume of work, at times, was overwhelming; however, knowing that warfighters would be using the device provided the incentive they needed to keep going until the job was finished. The Systems Integration and Support Directorate's Sheet Metal Fabrication Branch processed more than 66 tons of 3/16-inch steel sheeting.

"This job has a lot of steel components that are processed differently than the typical parts made from aluminum," sheet metal worker Robert Bruce said, adding that everyone worked hard to keep the project on schedule.

"Working as a team, with clearly defined goals, all piece parts were completed," said Robert Aten, branch chief, adding that all branch employees "contributed equally to this effort."

"Right now there are about six people (in sheet metal assembly) working on the flex-mount project," said Jack Andrejko, mechanical engineering technician. "We've been able to keep a steady flow of workers on the project; however, they go so fast that it's hard to keep the parts stocked."

Welding workers even came up with a fixture to speed up their process of welding the top of the assembly, according to Nawrocki.

In less than a year, Tobyhanna made subtle design changes to improve the CREW antenna system, according to Knabel, who noted that the project team worked with the customer to increase the capabilities of the flex mount device.

"Personally, I think the design is 10 times better than the original retrofit idea," said Nawrocki. "Fewer parts and less things to go wrong."

*One Vision, One Mission - The Warfighter*

# ***Army Team C4ISR***

## ***Tomorrow's Technology for Today's Army***

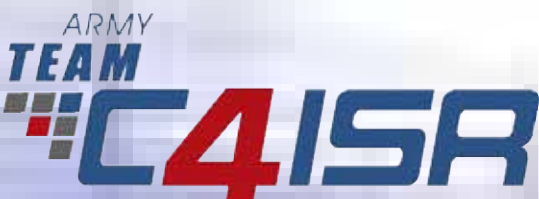
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